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TM 11-5815-307-15

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

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OPERATOR, AND ORGANIZATIONAL, DS, GS, AND DEPOT MAINTENANCE MANUAL INCLUDING REPAIR PARTS AND SPECIAL TOOL LISTS

TELETYPEWRITER TERMINAL AN/MGC-22

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HEADQUARTERS, DEPARTMENT OF THE ARMY
FEBRUARY 1969

HIGH VOLTAGE

is used in the teletypewriter equipments provided in the AN/MGC–22

DEATH ON CONTACT

may result if safety precautions in the applicable technical manuals are not observed.

EXTREMELY DANGEROUS POTENTIALS

ALSO EXIST IN THE FOLLOWING UNITS:

Power and signal entrance box	120 volts ac and dc
Power distribution panels	120 volts ac
Air conditioners	120 volts ac
Blowers	120 volts ac
Terminal, Telegraph TH–5/TG	285 volts dc

VENTILATION IS ESSENTIAL

To prevent asphyxiation, ventilate the AN/MGC–22 at all times when occupied.

DON'T TAKE CHANCES!

CHANGE
No. 2

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C. *17 December 1973*

Operator, Organizational, DS, GS, and Depot Maintenance Manual Including Repair Parts and Special Tool Lists TELETYPEWRITER TERMINAL AN/MGC-22

TM 11-5815-307-15, 6 February 1969, is changed as follows:

1. A vertical bar appears opposite changed material.

2. Remove and insert pages as indicated in the page list below:

Remove	*Insert*
i	i
1-1 through 1-4	1-1 through 1-4
None	1-4.1 through 1-4.3
B-1 through B-5	B-1 and B-2

3. File this change sheet in the front of the manual for reference purposes.

By Order of the Secretary of the Army:

CREIGHTON W. ABRAMS
General, United States Army
Chief of Staff

Official:

VERNE L. BOWERS
Major General, United States Army
The Adjutant General

Distribution:

Active Army:

CNGB (1)
TSG (1)
ACSC-E (2)
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USAARENBD (1)
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MICOM (1)
TECOM (2)
ARADCOM (2)
ARADCOM Rgn (1)
OS Maj Comd (2)
USACDCEC (10)
USASTRATCOM (2)
HISA (ECOM) (18)
Armies (1)
7th USA (5)
USAREUR (5)
USASESS (10)
Svc Colleges (1)
Ft Huacuca (5)
WSMR (1)
Ft Carson (5)
USAERDAA (1)
USAERDAW (1)

Army Dep (1) except:
LBAD (10)
SAAD (30)
TOAD (14)
ATAD (10)
Gen Dep (1)
Sig Sec Gen Dep (2)
Sig Dep (2)
SigFLDMS (1)
Ft Richardson (ECOM OFC) (1)
USASTRATCOM-CONUS (5)
USASTRATCOM-EUR (5)
USASTRATCOM-PAC (2)
USASTRATCOM-SO (2)
USASTRATCOM-SIG GP-T (2)
Units org under fol TOE
(1 cy each):
11-85
11-86
11-87
11-95
11-97
11-127
11-158
11-500 (AA-AC)
29-134
29-136

NG and USAR: None

For explanation of abbreviations used, see AR 310-50.

CHANGE
NO. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, , D.C., *20 March 1972*

Operator, Organizational, Direct Support, General Support and Depot Maintenance Manual Including Repair Parts and Special Tool Lists TELETYPEWRITER TERMINAL AN / MGC-22

TM 11-5815-307-15, 6 February 1969, is changed as follows:

1. Inside the front cover, under EXTREMELY DANGEROUS POTENTIALS ALSO EXIST IN THE FOLLOWING UNITS, add the following:
Terminal, Telegraph TH-22 / TG ..... 115 / 230 vac
2. Remove and insert pages as indicated in the page list below:

Remove page—	*Insert pages—*
1-1 through 1-14	1-1 through 1-14.1
.....	1-17 and 1-18
2-9 and 2-10	2-9 and 2-10
3-1 and 3-2	3-1 and 3-2
3-5 through 3-10	3-5 through 3-10.2
4-3 and 4-4	4-3 and 4-4
4-9 and 4-10	4-9 through 4-12
Figure 3-5	Figures 3-5, 3-9
Figures 6-2 and 6-3	Figures 6-2 and 6-3

3. File this change sheet in front of the publication for reference purposes.

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TECHNICAL MANUAL
No. 11-5815-307-15

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., *6 February 1969*

OPERATOR, ORGANIZATIONAL, DS, GS, AND DEPOT MAINTENANCE MANUAL INCLUDING REPAIR PARTS AND SPECIAL TOOL LISTS

TELETYPEWRITER TERMINAL AN/MGC-22

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	II.	Organizational maintenance	4-8—4-18	4-4
	III.	Direct support, general support, and depot maintenance	4-19—4-27	4-13
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	II.	Demolition of materiel to prevent enemy use	6-3—6-4	6-1
APPENDIX	A.	REFERENCES		A-1
	B.	BASIC ISSUE ITEMS LIST AND ITEMS TROOP INSTALLED OR AUTHORIZED LIST		B-1
	C.	MAINTENANCE ALLOCATION		C-1
	D.	ORGANIZATIONAL, DS, GS, AND DEPOT REPAIR PARTS		D-1
INDEX				I-1

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1-1. Scope

a. This manual describes Teletypewriter Terminal AN/MGC-22 (fig. 1-1 and 1-2) and contains installation, operation, and maintenance instructions. The basic issue items list (BIIL) and items troop installed or authorized list (ITIAL) are included as appendix B. The maintenance allocation chart (MAC) appears as appendix C, and the organizational, direct support, general support, and depot repair parts lists appear as appendix D.

b. The term COMSEC equipment is used throughout this manual to indicate the cryptographic components (communications security equipments) of the AN/MGC-22 which are normally requisitioned by and supplied to the using organization. Detailed information about the COMSEC equipments is not included in these instructions. However, sufficient information is provided to permit installation and testing of the COMSEC equipment. The COMSEC equipments are covered in detail in their respective manuals. The items are listed in paragraph 1-6*b*.

c. Throughout this manual, references are made to other publications which cover the installation, operation, and maintenance of equipments which are installed in the AN/MGC-22. A complete listing of applicable reference publications is provided in appendix A.

d. Appendix B is current as of 15 December 1972. Appendixes C and D are current as of 6 November 1968.

e. Official nomenclature followed by (*) is used to indicate all models of the equipment. Thus, Reperforator-Transmitter, Teletypewriter TT-76 (*)/GGC represents Reperforator-Transmitters, Teletypewriter TT-76/GGC, TT-76A/GGC, TT-76B/GGC, and TT-76C/GGC; Teletypewriter TT-98(*)/FG represents Teletypewriters TT-98/FG, TT-98A/FG, TT-98B/FG, and TT-98C/FG; Teletypewriter Reperforator TT-346(*)/FG represents Teletypewriter Reperforators TT-346/FG and TT-346A/FG; Teletypewriter TT-119(*)/FG represents Teletypewriters TT-119/FG, TT-119A/FG, and TT-119B/FG; Teletypewriter TT-123(*)/FG represents Teletypewriters TT-123/FG and TT-123A/FG; Reperforator-Transmitter, Teletypewriter TT-178(*)/FG represents TT-178/FG, TT-178A/FG, and TT-178B/FG.

1-1.1. Indexes of Publications

a. DA Pam 310-4. Refer to the latest issue of DA Pam 310-4 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

b. DA Pam 310-7. Refer to DA Pam 310-7 to determine whether there are modification work orders (MWO's) pertaining to the equipment.

1-2. Maintenance Forms and Records

Maintenance forms, records, and reports which are to be used by maintenance personnel at all maintenance levels are listed in and prescribed by TM 38-750.

1-3. Reporting of Equipment Publication Improvements

The reporting of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications) and forwarded direct to Commander, US Army Electronics Command, ATTN: AMSEL-MA-C, Fort Monmouth, NJ 07703.

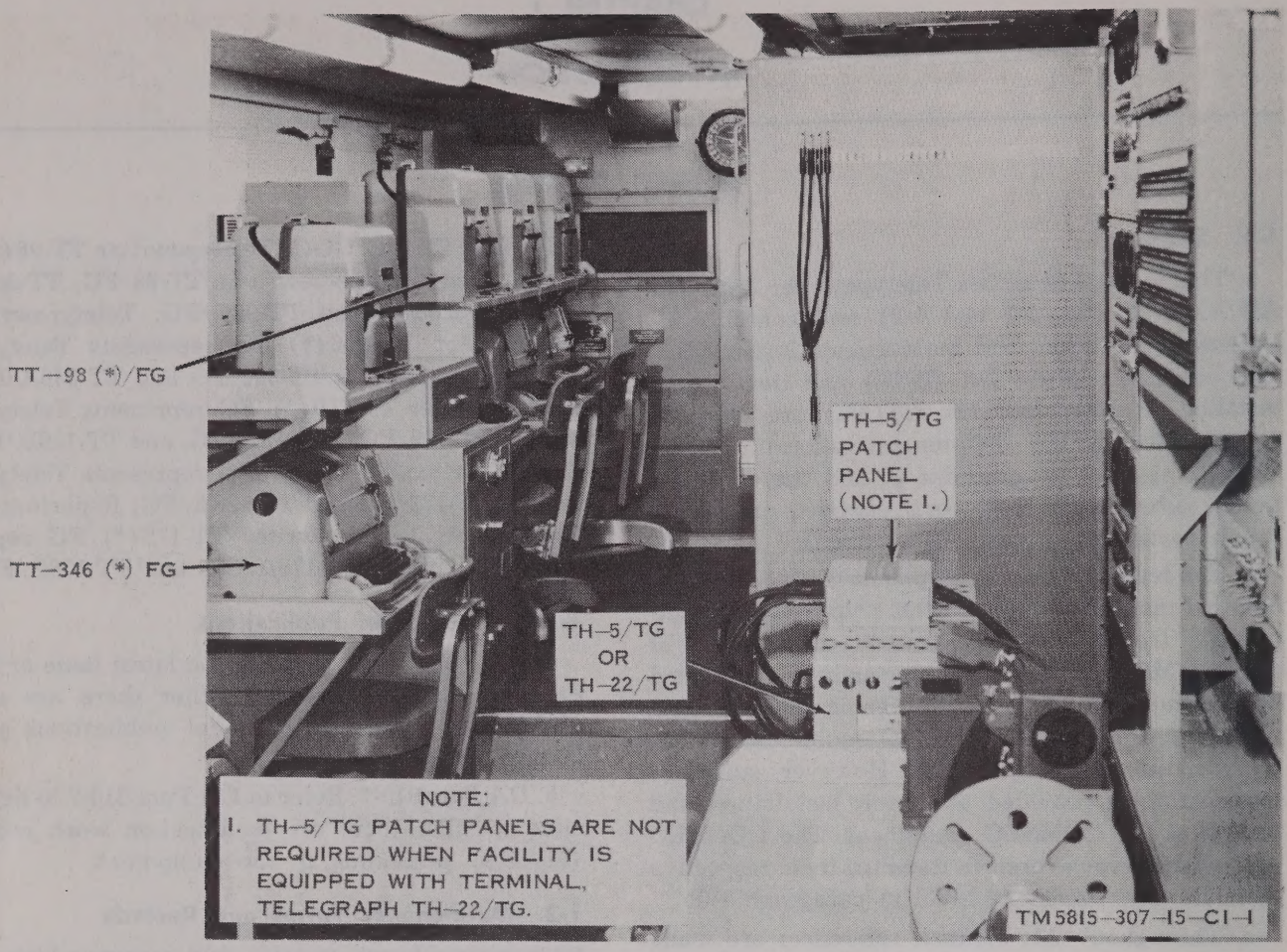


Figure 1-1. AN/MGC-22, looking forward, showing receive positions.

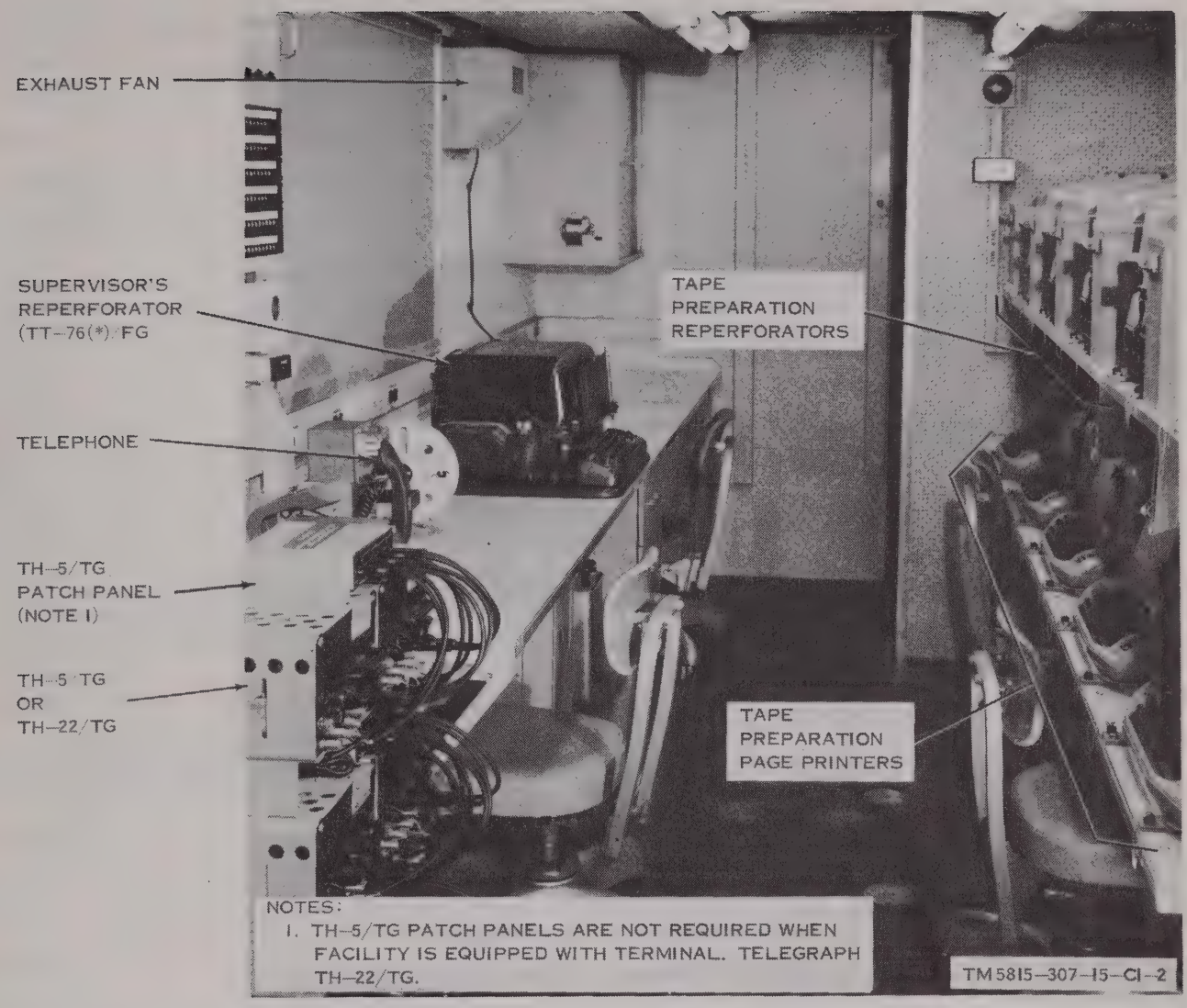


Figure 1-2. AN/MGC-22, looking toward rear, showing supervisor's position and TH-5/TG's.

Section II. DESCRIPTION AND DATA

1-4. Purpose and Use
(Fig. 1-1 and 1-2.)

a. Purpose. Teletypewriter Terminal AN/MGC-22 fulfills the requirement for a transportable (van) cryptographic or plain text, voice-frequency (vf) teletypewriter subscriber terminal and a cryptographic or plain text, low-level keying, teletypewriter tape preparation facility.

b. Use. The AN/MGC-22 normally is used as a terminal facility for four subscriber stations in the vf, full-duplex mode of operation. The AN/MGC-22 may be used for direct current (dc) teletypewriter operation but dc is not supplied by an AN/MGC-22. The AN/MGC-22 is also used to prepare message tapes for subscribers for relay to and through an associated teletypewriter relay central such as Teletypewriter Relay Central AN/MGC-23.

1-5. Technical Characteristics

Technical characteristics pertaining to the operating components installed in the AN/MGC-22 are covered in their applicable technical manuals (app A). Overall technical characteristics for the AN/MGC-22 are given below.

a. Teletypewriter Circuits and Facilities.

Secure, synchronous circuits	4 full-duplex vf or dc (dc not supplied to the line).
Tape preparation facilities	5 positions

Monitor facilities	4 positions
Supervisor facilities (tape preparation)	1 position
Local communication facilities	4 Telephone Set TA-312/PT.
Voltage requirements	See paragraph 2-3

b. Power Requirements (Maximum Wattage).

Air conditioners (2)	7,000 watts
Heaters (4)	6,000 watts
Exhaust fan (1)	100 watts
Comsec equipments (TSEC/KW-7) (8)	640 watts
AN/GGC-9 (2)	900 watts
AN/FGC-25X (5)	1,650 watts
TT-98(*)/FG (5)	600 watts
TT-346(*)/FG (8)	600 watts
TT-123(*)/FG (1)	185 watts
TT-76(*)/GGC (1)	150 watts
TH-5/TG (8)	480 watts
Fluorescent lights (17)	425 watts

c. Dimensions.

Length	27 ft.
Width	8 ft.
Height	11 ft.
Volume	2,376 cu ft.

d. Weight (Maximum).

Including Comsec equipments	18,990 lb.
Less Comsec equipment	18,390 lb.

1-5.1. Components Comprising the Operable End Item

FSN	Qty	Nomenclature, part No., and mfr code	Usable-on code
		NOTE Number 1 in the usable-on code column refers to V-317/MGC fabricated by Tobyhanna Army Depot, QR-66-43; number 2 refers to V-317/MGC manufactured by Electro-Magnetic, Ind, contract DA-36-039-AMC-05599(E).	
		NOTE Dry batteries shown are used with the equipment but are not considered part of the equipment. They will not be preshipped automatically but are to be requisitioned in quantities necessary for the particular organization, in accordance with SB 11-6.	
	8	Communications Security Equipment TSEC/KW-7	
6110-985-7875	1	Distribution Box J-1077A/U	
5815-892-3434	2	Distributor-Transmitter Set, Teletypewriter AN/GGC-9.	
5815-577-6256	1	Distributor-Transmitter, Teletypewriter TT-123A/GGC.	
5815-999-3048	1	Low Level Signaling Device TT-523/GGC	
5815-999-3047	1	Low Level Signaling Device TT-524/FGC	
5815-892-1096	8	Reperforator, Teletypewriter TT-346/FG	
5815-553-6061	1	Reperforator-Transmitter, Teletypewriter TT-76A, B, C/GGC.	
5815-543-1327	5	Reperforator-Transmitter, Teletypewriter TT-178A/FG.	
5815-921-6825	4	Rewinder, Teletypewriter: MR8A; 92239	
5815-933-7018	1	Semitrailer Van, Electronic Equipment V-317/MGC: (Modified M348A2N Van).	
	1	Telephone Set TA-312/PT	
5815-503-2764	5	Teletypewriter Set TT-98/FG	
5815-539-7773	5	Teletypewriter Set TT-118, A/FG	
5805-246-8734	10	Terminal, Telegraph TH-5/RG	
		or	
5805-907-8300	10	Terminal, Telegraph TH-22/RG	
		SEMITRAILER VAN, ELECTRONIC EQUIPMENT V-317/MGC	
4120-759-2632	2	Air Conditioner	1
	2	Air Conditioner	2

FSN	Qty	Nomenclature, part No., and mfr code	Usable—on code
4210-926-4136	4	Basket, Wastepaper: SC-D-539454; 80063	1,2
6135-050-0916		Battery, Dry BA-44	1,2
6135-120-1020		Battery, Dry BA-30	1,2
7920-291-8305	1	Broom: 1820; 45092	1,2
7920-178-8315	1	Brush, Dusting, Bench: SC-C-539469; 80063	1,2
5995-823-2715	2	Cable Assembly and Reel: C/o CX-4566A/G 250 ft lg and RC-435/U.	1,2
5410-752-2435	3	Cable Assembly and Reel: C/o CX-7453/U 100 ft lg and RC-435/U.	1,2
5995-752-2548	3	Cable Assembly, Power, Electrical CX-7705/U; 15 ft stub.	1,2
5995-879-9688	5	Cable Assembly, Power Electrical: Approx 60 in. lg; 1 UP-121/M connector one end, 1 three pin Sunbank A06-14S7S-42 connector other end; SC-C-508805; 80063.	1,2
5995-879-9676	5	Cable Assembly, Telephone: Approx 42 in. lg; 3 spade lugs one end, 1 four pin Sunbank A06-184P-42 connector other end; SC-C-508812; 80063.	1,2
5995-879-9678	5	Cable Assembly, Telephone: Approx 40 in. lg; 3 spade lugs one end, 1 four pin Sunbank A06-14S7PX-42 connector other end; SC-C-512367; 80063.	1,2
5995-926-0785	6	Cable Assembly, Telephone: Approx 1 ft lg; PJ-047B plug each end; SC-C-506302-GP1; 80063.	1,2
5995-926-0790	6	Cable Assembly, Telephone: Approx 1 ft lg; PJ-047R plug each end; SC-C-506303-GP1; 80063.	1,2
5995-926-0786	8	Cable Assembly, Telephone: Approx 1 ft 6 in. lg; PJ-047B plug each end; SC-C-506302-GP2; 80063.	1,2
5995-926-0792	8	Cable Assembly, Telephone: Approx 1 ft 6 in. lg; PJ-047R plug each end; SC-C-506303-GP2; 80063.	1,2
5995-926-0783	2	Cable Assembly, Telephone: Approx 1 ft 6 in. lg; PJ-039R plug each end; SC-C-506304-GP1; 80063.	1,2
5995-926-0787	8	Cable Assembly, Telephone: Approx 2 ft lg; PJ-047B plug each end; SC-C-506302-GP3; 80063.	1,2
5995-926-0791	8	Cable Assembly, Telephone: Approx 2 ft lg; PJ-047R plug each end; SC-C-506303-GP3; 80063.	1,2
5995-926-0784	2	Cable Assembly, Telephone: Approx 2 ft lg; PJ-309R plug each end; SC-C-506304-GP2; 80063.	1,2
5925-926-0863	2	Cable Assembly, Telephone: Approx 2 ft 6 in. lg; PJ-047B plug each end; SC-C-506302-GP4; 80063.	1,2
5995-926-0789	2	Cable Assembly, Telephone: Approx 2 ft 6 in. lg; PJ-047R plug each end; SC-C-506303-GP4; 80063.	1,2
5995-832-7769	1	Cable Assembly, Telephone: Approx 18 in. lg; PJ-047R plug one end, SC-C-506863; 80063.	1,2
5995-832-7770	1	Cable Assembly, Telephone: Approx 18 in. lg; PJ-047B one end, skinned and tinned other end; SC-C-506862; 80063.	1,2
5995-926-0782	1	Cable Assembly, Telephone: Approx 4 ft lg; F/TA-312/PT; SC-C-506310-GP1; 80063.	1,2
5995-889-0803	2	Cable Assembly, Telephone CX-4760A/U: 15 ft stub	1,2
7110-273-8798	12	Chair, Rotary: AA-C-293A, type 2, class 2, style B; 81349 (When replacing, retain mtg bkt for use on new chair.)	1,2
7910-832-7222	1	Cleaner, Vacuum: 2800; 29335	1,2

FSN	Qty	Nomenclature, part No., and mfr code	Usable—on code
6645-224-8629	1	Clock, Aircraft, Mechanical: P-642, type A; 11755	1,2
5120-293-2696	7	Extractor, Electron Tube: 7113; 95344	1,2
5120-293-2692	7	Extractor, Electron Tube: TP-13-16; 73917	1,2
5120-776-9917	8	Grip, Cable, Jaw: EQA6-8P; 95344	1,2
5120-776-9918	6	Grip, Cable, Jaw: EQA-26S; 95344	1,2
4520-224-7909	4	Heater, Space, Electrical: SC-D-539485; 80063	1,2
6230-729-9614	1	Lantern, Electric: SC-D-539491; 80063	1,2
5410-752-2525	2	Lead, Electrical: Ground strap; SM-B-352166; 80063	1,2
6230-239-3518	1	Light, Extension: SC-C-539496; 80063	1,2
5120-293-3603	1	Pin Straightner, Electron Tube	1,2
3895-252-6896	1	Reel Unit RL-31E	1,2
7110-687-8955	1	Safe: AA-F-358b, class 3, size VI; 81349	1,2
	1	Screwdriver SC-C-539502-4; 80063	1,2
7520-162-6178	1	Sharpener, Pencil: SC-C-539503; 80063	1,2
6645-303-4945	1	Stamp, time and date: SC-D-539476; 80063	1,2
5180-752-9778	1	Tool kit, communication equipment TK-145/G	1,2
		POWER GROUP	
6350-193-2776	1	Bell, electrical: 156 (24 vac); 19557	1,2
6350-921-6889	1	Buzzer: 115, size 4 (24 vac); 19557	1,2
		SIGNAL GROUP	
5805-503-1145	1	Ringer, telephone BZ-23/PT	1,2

1-5.2. Expendable Consumable Items

A list of expendable consumable items required for operation appears in table 1-1.

Table 1-1. Expendable Consumable Supplies and Material

The supplies and material listed in this table are required for operation of this equipment and are authorized to be requisitioned by SB 700-50. The FSN for the applicable unit of issue required can be found in appropriate supply catalogs. The FSCM is used as an element in item identification to designate the manufacturer, distributor, or Government agency, etc., and is identified in SB 708-42.

Item	Description	Ref No. and FSCM	FSC
1	Paper, Recording: type 1, class 1, grade A.	VV-P-547d 81349.	7530
2	Ribbon, Printing, Teletypewriter: type 1, grade A, class 1.	DD-R-311D 81349.	7510
3	Tape, Teletypewriter	UU-T-120 81349.	7530

NOTE

The above items are used with models V-317/MGC fabricated by Tobyhanna Army Depot, QR-66-43 and V-317/MGC manufactured by Electro-Magnetic, Ind, contract DA-36-039-AMC-05599(E).

1-6. Components of AN/MGC-22

The components of the AN/MGC-22 are listed in the basic issue items list (app B). The charts in *a*, *b*, and *c* below list the main components, COMSEC equipments, and running spares that comprise an AN/MGC-22.

a. Main Components.

Quantity (ea)	Item
1	Semitrailer, Van, Electronic Facility V-317/MGC (Vehicle M348A2N).
2	Distributor-Transmitter Set, Teletypewriter AN/GGC-9.
1	Teletypewriter Distributor-Transmitter TT-123(*)/FG.
8	Teletypewriter Reperforator TT-346(*)/FG.
1	Reperforator-Transmitter, Teletypewriter TT-76(*)/GGC.
5	Reperforator-Transmitter, Teletypewriter TT-178(*)/FG.
5	Teletypewriter TT-119(*)/FG.
5	Teletypewriter TT-98(*)/FG.
8	Terminal, Telegraph TH-5/TG.
4	Teletypewriter Tape Rewinder RL-218/UG.
1	Telephone Set TA-312/PT.
1	Black patch panel.
1	Red patch panel.
3	Power distribution panel.
1	TH-5/TG switch panel.
4	TH-5/TG patch panel.
1	Distribution Box J-1077A/U.
1	Reel Unit RL-31E.
2	Air conditioner.
2	Thermostat.
4	Heater.
1	Exhaust fan.
5	Low Level Signaling Device TT-524/FGC.
1	Low Level Signaling Device TT-523/GGC.
9	Reperforator tape box assembly.
9	Transmitter tape box assembly.
2	TD tape box assembly.
1	Safe, 2-drawer, combination.
1	Reel, Tape, Hand MR-8A.
1	Wall clock, 8-day.
2	Tube puller, wire mesh.
2	Tube pin straightener, 7 and 9 pin.
1	Bulletin board (36 by 48 inches).
1	Pencil sharpener.
1	Date-time stamp.
1	Cord assembly, telephone.
4	Patch cord, 24-inch, TTY, 2 plug.
18	Patch cord, 18-inch, TTY, 2 plug.
18	Patch cord, 12-inch, TTY, 2 plug.
12	Patch cord, 6-inch, TTY, 2 plug.
2	Patch cord, 24-inch, meter, 2 plug.
2	Patch cord, 18-inch, meter, 2 plug.
16	Patch cord, 12-inch, TH-5/TG, 1 plug.
1	Storage cabinet, wall-mounted, 24 by 26 inches.
2	Desk, storage tray, 3-layer.
12	Chair, swivel.
5	Waste basket.
1	Workbench, 6-drawer, 12 by 2 ft.
1	Coat hanger, 4 hooks.
1	Fire axe, 24 inches.
1	Fire axe, 36 inches.
1	Fire extinguisher, CO_2 (5-lb).
1	Broom, straw.
1	Sledge hammer, 8-lb, with spare handle.
2	Ground rod, 6-ft.
2	Ground strap, 10-ft.
1	Hand lantern.
1	Screwdriver, 8-inch.
1	Hand brush, 12-inch.
1	First aid kit.
3	Entrance steps.
1	Ladder assembly (12-foot).
1	Pioneer kit.
1	Lock, combination.
3	Cable Assembly, Power CX-7453/U, 100 ft, on Reel RC-435/U.
2	Cable Assembly, Telephone CX-4566/U, 250 ft, on Reel RC-435/U.
3	Cable Assembly, Power CX-7705/U, 15 ft, on same Reel RC-435/U as CX-7453/U.
2	Cable Assembly, Telephone CX-4760/U, 15 ft, on same Reel RC-435/U as CX-4566/U.
4	Battery BA-44.

b. COMSEC Equipment. The only COMSEC equipments used are eight TSEC/KW-7.

c. Running Spares.

Quantity (ea)	Item
2	Terminal, Telegraph TH-5/TG. (TH-22/TG)
6	Fluorescent lamp.
6	Fluorescent lamp starter.
1	Lamp, incandescent, blue, 50-watt, 125-vac GE-25A/B.
1	Lamp, incandescent, red, 15-watt, 125 vac.
1	Lamp, incandescent, 24-v, GE 327.
1	Lamp, incandescent, GE 50W/RS.
2	Lamp, neon, glow, NE-34.
10	Lamp, neon, glow, NE-45.
8	Lamp, neon, glow, NE-51.
5	Fuse, 2-amp, Littelfuse 313002 (FSN 5920-583-8487).
5	Fuse, 5-amp, Littelfuse 311005 (FSN 5920-014-2630).
15	Fuse, 1/2 amp, 3AG, Littelfuse 312500 (FSN 5920-280-8344).
15	Fuse, 1/8 amp, Littelfuse 312125 (FSN 5920-356-2188).
10	Fuse, 3/10 amp, Littelfuse 312300 (FSN 5920-577-2578) (for use in Low Level Signaling Device TT-524/FGC).

1-7. Common Names

Equipment to which common names have been assigned are listed below.

Nomenclature	Common name
Semitrailer Van, Electronic Facility V-317 ( )/MGC (Vehicle M348A2N)	Van.
Teletypewriter Distributor-Transmitters TT-123(*)/FG	Lineup TD.
Distributor-Transmitter Set, Teletypewriter AN/GGC-9	Transmitter set.
Distributor-Transmitter, Teletypewriter TT-322/GGC (part of AN/GGC-9)	TD.
Teletypewriter Reperforator TT-346(*)/FG	Monitor reperforator.
Reperforator-Transmitter, Teletypewriter TT-76(*)/GGC	Supervisor's reperforator.
Reperforator-Transmitter, Teletypewriter TT-178(*)/FG	Tape preparation reperforator.
Teletypewriter TT-98(*)/FG	Monitor page printer.
Teletypewriter TT-119(*)/FG	Tape preparation page printer.
Terminal, Telegraph TH-5/TG or TH-22/TG	Line unit.
Telephone Set TA-312/PT	Telephone.
Teletypewriter Tape Rewinder RL-218/UG	Tape winder.
Communications Security Equipment TSEC/KW-7	COMSEC equipment.
Cable Assembly, Telephone CX-4566/U (250 ft)	26-pair cable.
Cable Assembly, Telephone CX-4760/U (15 ft)	26-pair cable stub.
Cable Assembly, Power CX-7453/U (100 ft)	Power cable.
Cable Assembly, Power CX-7705/U (15 ft)	Power cable stub.
Reel, Tape, Hand MR-8A	Manual tape winder.
Distribution Box J-1077A/U	Dropline box.

1-8. Semitrailer, Van, Electronic Facility V-317/MGC

All operating components of the AN/MGC-22, except the COMSEC equipments, are installed in the van. The van is shipped minus the COMSEC equipments (para 1-6*b*) and they must be requisitioned by the using organization upon receipt of the van. The van is fully insulated and weatherproofed, and can be moved by tractor or transported by cargo aircraft. Normal entry into the van is by stairway, through the rear door and the vestibule just inside the rear door. A folding door is used to maintain blackout integrity between the vestibule and the main part (operations area) of the van. All equipment racks and mountings are secured to the walls and floor of the van. Power and signal wiring are housed in wire ducts. Storage areas and mounting fixtures are provided for spares and accessory items. Two air conditioners are floor-mounted across the front of the van. Four heaters are strategically located to provide heat when required. An exhaust fan is located in the curbside wall of the van to provide ventilation. Ducts for air circulation and cooling (from air conditioners) are installed along the ceiling and through the COMSEC equipment racks. Air conditioner maintenance access doors and air discharge vents are provided on the exterior front wall of the van.

a. Lighting (fig. 1-3). Two rows of ceiling-mounted fluorescent lights provide lighting throughout the van. Three dome lights provide emergency lighting. The dome lights are energized by using a battery source within the van or the tractor battery. Power for the fluorescent lights is supplied through circuit breaker No. 1 in power distribution panel No. 1. All lights are controlled by a light control relay ((1) below), a BLACKOUT-BYPASS switch ((2) below), and three BLACKOUT SWITCHES ((2) below). Also, the fluorescent lights are controlled by the ODD ((4) below) and EVEN ((5) below) lights switches.

(1) The light control relay is energized by the power distribution panel (power applied and the circuit breaker in the ON position). When the light control relay is energized, it functions as follows:

(*a*) Closes the circuit to the BLACKOUT-BYPASS switch.

(*b*) Opens the emergency battery dome lights circuit ((3) below).

(2) The Three BLACKOUT SWITCHES are located at and controlled by the rear door, vestibule door, and curbside door. A BLACKOUT-BYPASS switch is provided to circumvent the blackout feature built into the van.

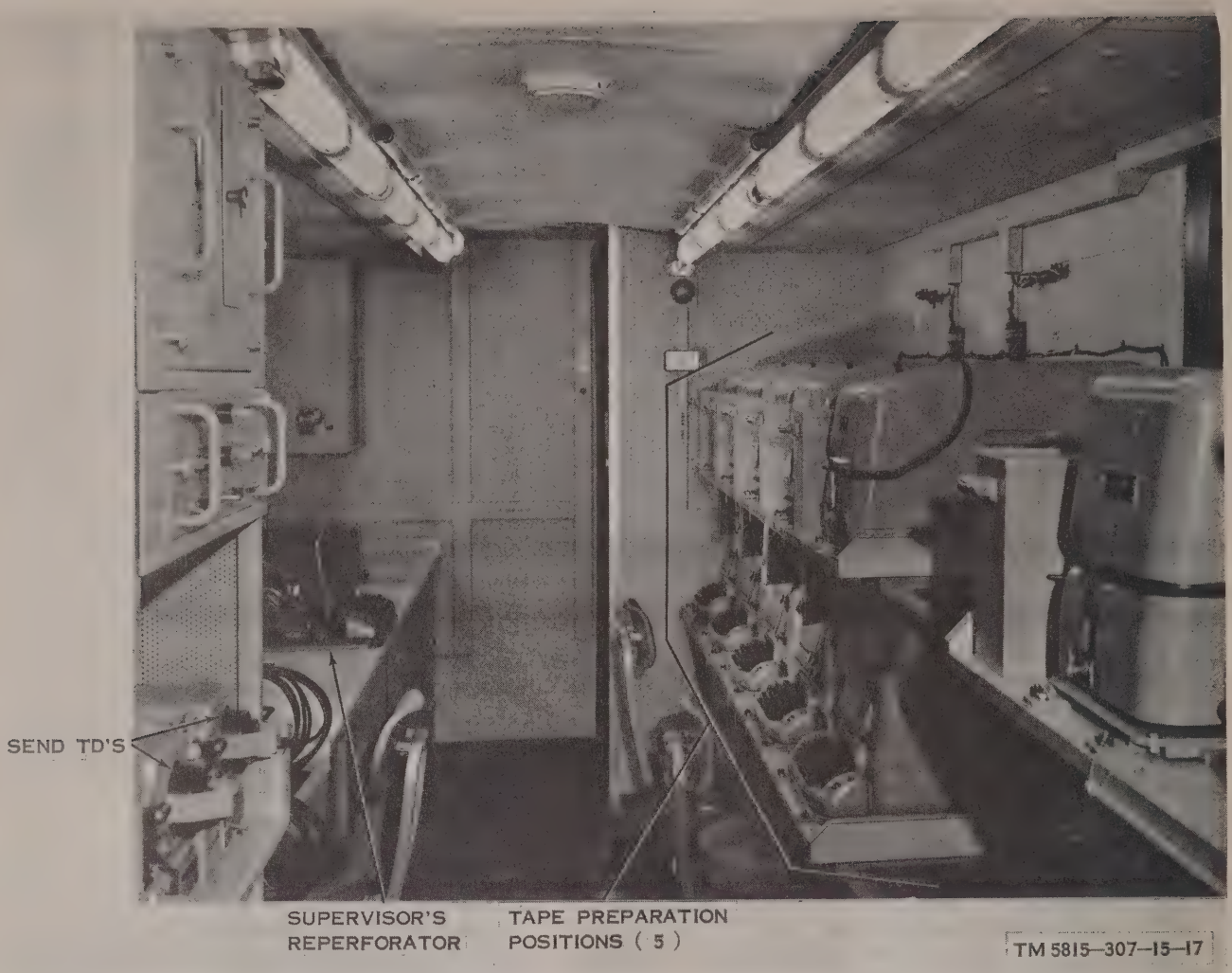


Figure 1-3. AN/MGC-22, looking toward rear of van.

(a) When the BLACKOUT-BYPASS switch is at BLACKOUT and the ODD and/or EVEN light switch is at ON, opening any one of the doors will open the lighting circuit and the lights will be extinguished.

(b) When the BLACKOUT-BYPASS switch is at BYPASS and the ODD and/or EVEN light switch is at ON, the blackout feature is bypassed and opening any door will have no effect on lighting; lights will remain lighted.

(3) Power will be supplied to the three dome lights as follows:

(a) When a power failure occurs at the main power source, the power failure will cause the light control relay to deenergize and close the circuit to the emergency lighting circuit.

(b) When the dome lights switch is at either EMERG. BATT or TRACTOR position.

(c) When all doors are closed (closing the BLACKOUT SWITCHES) or the BLACKOUT-BYPASS switch is at BYPASS.

(4) All odd-numbered lights will light when the ODD light switch is in the ON position.

(5) All even-numbered lights will light when the EVEN light switch is in the ON position.

b. Power and Signal Entrance Box (Fig. 2-3). The power and signal entrance box is mounted on the curbside exterior wall of the van. It contains three alternating current (ac) power receptacles, two 26-pair cable receptacles, one pair of telephone circuit binding posts, a duplex convenience ac power receptacle, and three ground connection posts. All receptacles and connectors are weatherproofed; a cover is provided to protect the receptacles and connectors during transit or storage.

c. Binding Post Signal Entrance Box (fig. 2-6). The binding post signal entrance box is located above the power and signal entrance box. It contains six rows of binding posts that are parallel-connected with the contacts of the two 26-pair cable receptacles in the power and signal entrance box

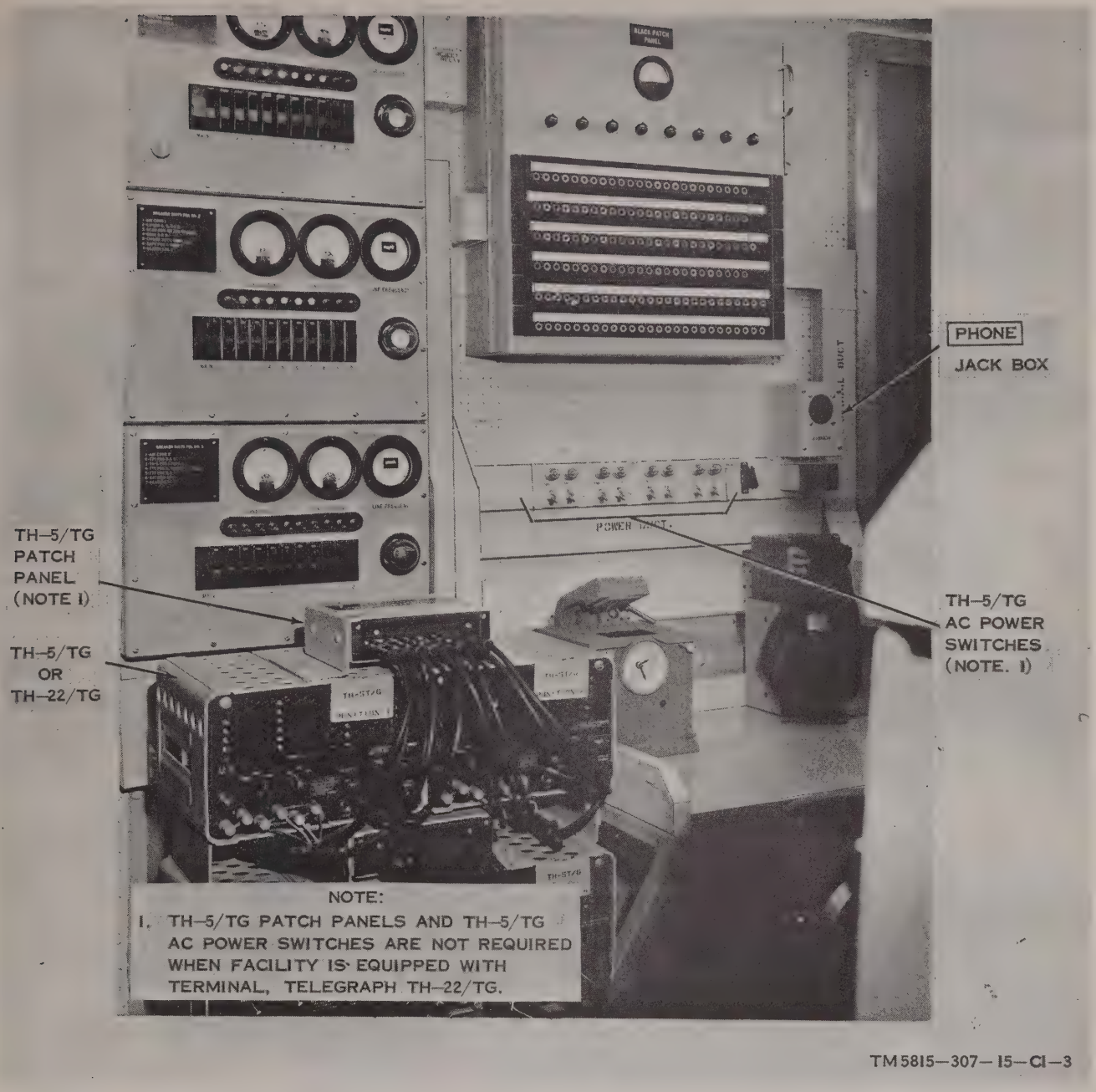


Figure 1-4. AN/MGC-22, part of curbside wall.

The binding posts are provided for connection of signal circuits when field wire is used. A cover is provided to protect the binding posts and connections during use and during transit or storage.

d. Power Distribution Panels (fig. 1-4). Three ac power distribution panels are mounted on the interior curbside wall, about in the center of the van. A metal identification plate, attached to each power distribution panel, lists the equipments which are supplied power by that particular power distribution panel. Each power distribution panel contains the following:

(1) Three meters: LINE VOLTAGE, LINE CURRENT, and LINE FREQUENCY.

(2) A large neon bulb (NE-34); when lighted, indicates that power is applied to the power distribution panel.

(3) A main circuit breaker.

(4) Tributary circuit breakers.

(5) Tributary circuit breaker indicator lights (neon bulbs NE-45).

e. Air Conditioners. Two air conditioners are located at the front wall of the van. They may be used for cooling or ventilating. Each air conditioner has a cooling capacity of 18,000 British thermal

units (Btu) per hour. Air is distributed throughout the van by ducts connected to the front of the air conditioners. Outlet vents provide condenser air discharge to the outside of the van.

f. Electric Heaters. Four electric heaters are stored on the floor of the van: three on the roadside wall and one on the curbside wall. Each heater contains a 1,500-watt heating element. A switch permits the heating element and fan to be operated together or the fan to be operated alone for air circulation.

1-9. Communications Equipment

a. RED PATCH PANEL (fig. 3-6). The RED PATCH PANEL is located on the curbside wall at the front of the van. It contains a milliammeter, a microammeter, and jacks to permit measurement of line current (milliamperes), low-level keying current (microamperes), and the patching between COMSEC equipment (CIPH 1, CIPH 2, etc.) and teletypewriter send and receive equipments. Sixteen fuses (CIPH REC LOOP FUSES F4 through F19) are also located in the RED PATCH PANEL and protect the SEND MONITOR and receive circuits.

b. BLACK PATCH PANEL (fig. 3-5). The BLACK PATCH PANEL is located on the curbside wall of the van near the ac power distribution panels. It contains a milliammeter, eight VF-DC switches, and jacks to permit a variety of patching options between incoming lines, voice-frequency (vf) equipment, and COMSEC equipments. The BLACK PATCH PANEL also contains a METER MA jack, to measure line current on the milliammeter; a PHONE INCOMING jack; and groups of SERIES JACKS and MULTIPLE JACKS.

c. TH-5 / TG Patch Panels (fig. 1-4). There are four TH-5 / TG patch panels. Each patch panel contains the jacks for two TH-5 / TG's. A TH-5 / TG patch panel is located above each pair of TH-5 / TG's on the curbside wall of the van. The patch panels are hard-wired to the circuitry of the BLACK PATCH PANEL. The front of each TH-5 / TG patch panel contains the jack positions, such as TH-5 / TG LINE 4WS, 4WR, and the TH-5 / TG LOOP SEND and REC jacks.

NOTE

Patch panels not required when facility is equipped with TH-22 / TG's.

d. TH-5 / TG Switch Panel (fig. 1-4). The TH-5 / TG switch panel is located just below the BLACK PATCH PANEL on the curbside wall of the shelter. The switch panel contains eight switches and eight indicator lights. Each switch controls the ac applied to a TH-5 / TG.

NOTE

Switch panel not required when facility is equipped with TH-22 / TG's.

e. SET POS. Equipment. The SET POS. equipment is located on the curbside wall, at the front of the van. It consists of a lineup transmitter-distributor (TD) (TT-23(*) / FG, TM 11-2277) and a monitor page printer (TT-98(*) / FG, TM 11-5815-200-12). The monitor page printer is arranged for full-duplex operation. The SET POS. equipment is used to line up the circuits of the AN / MGC-22 when required. The SET POS. equipment is plugged into jacks in the SET POS. patch panel (jack positions TD, SIG, KYBD, and PTR).

f. SET POS. Patch Panel. The SET POS. patch panel is located above the SET POS. equipment on the curbside wall, at the front of the van. The SET POS. patch panel contains the TD SIG, KYBD, and PTR jacks, which are wired to two jack positions (SET TTY TD-KYBD and SET TTY PTR) in the RED PATCH PANEL. Patch cords are used between jacks on the RED PATCH PANEL to connect SET POS. (lineup) equipment and communications equipment.

g. COMSEC Equipment. Eight TSEC / KW-7's are located in racks on the curbside wall at the front of the van (fig. 1-5). Four TSEC / KW-7's are used in send circuits; four TSEC / KW-7's are used in receive circuits. The COMSEC equipments permit synchronous, secure operation over four full-duplex circuits and are wired to jack positions in the BLACK PATCH PANEL and the RED PATCH PANEL.

h. Low Level Signaling Device TT-524 / FGC (fig. 1-6). Five TT-524 / FGC's are mounted on the roadside wall of the van behind the TT-178(*) / FG's. The low-level signaling devices are used in local-tape preparation teletypewriter circuits only. The low-level signaling devices control the radiofrequency interference (rfi) generated by teletypewriter equipment during tape preparation.

i. Send Positions 1, 2, 3, and 4 (fig. 1-5). Send positions 1, 2, 3, and 4 are located on the curbside wall, at the front of the van. The send positions consist of the transmitter sets (AN / GGC-9), COMSEC equipments, line units (Terminal, Telegraph TH-5 / TG or TH-22 / TG), monitor reperforators (TT-346(*) / FG), and the tape winders. Complete descriptions of the send positions (1 through 4) equipments are contained in their respective technical manuals (app. A).

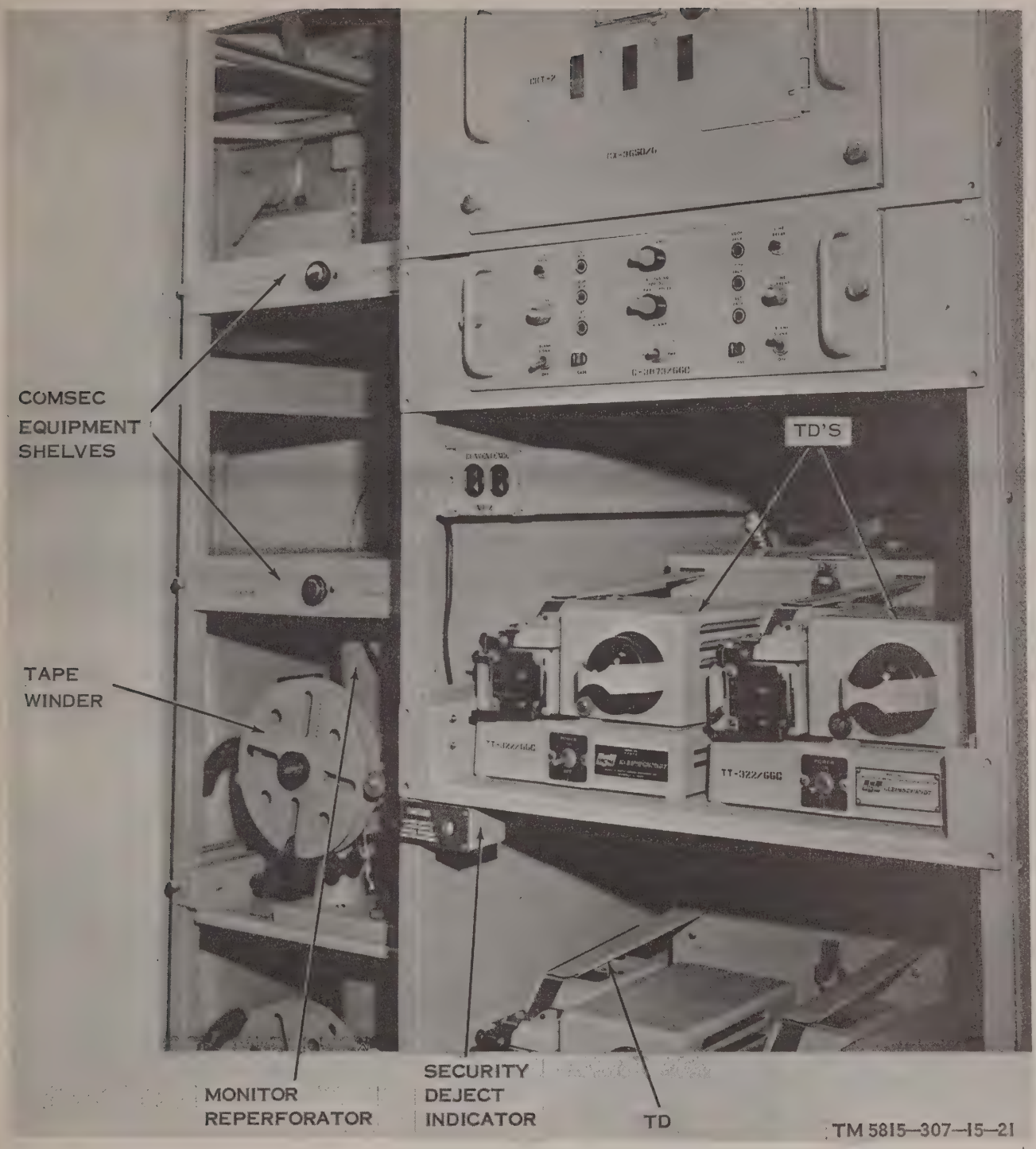


Figure 1-5. AN / MGC-22, part of curbside wall showing transmitter set equipment.

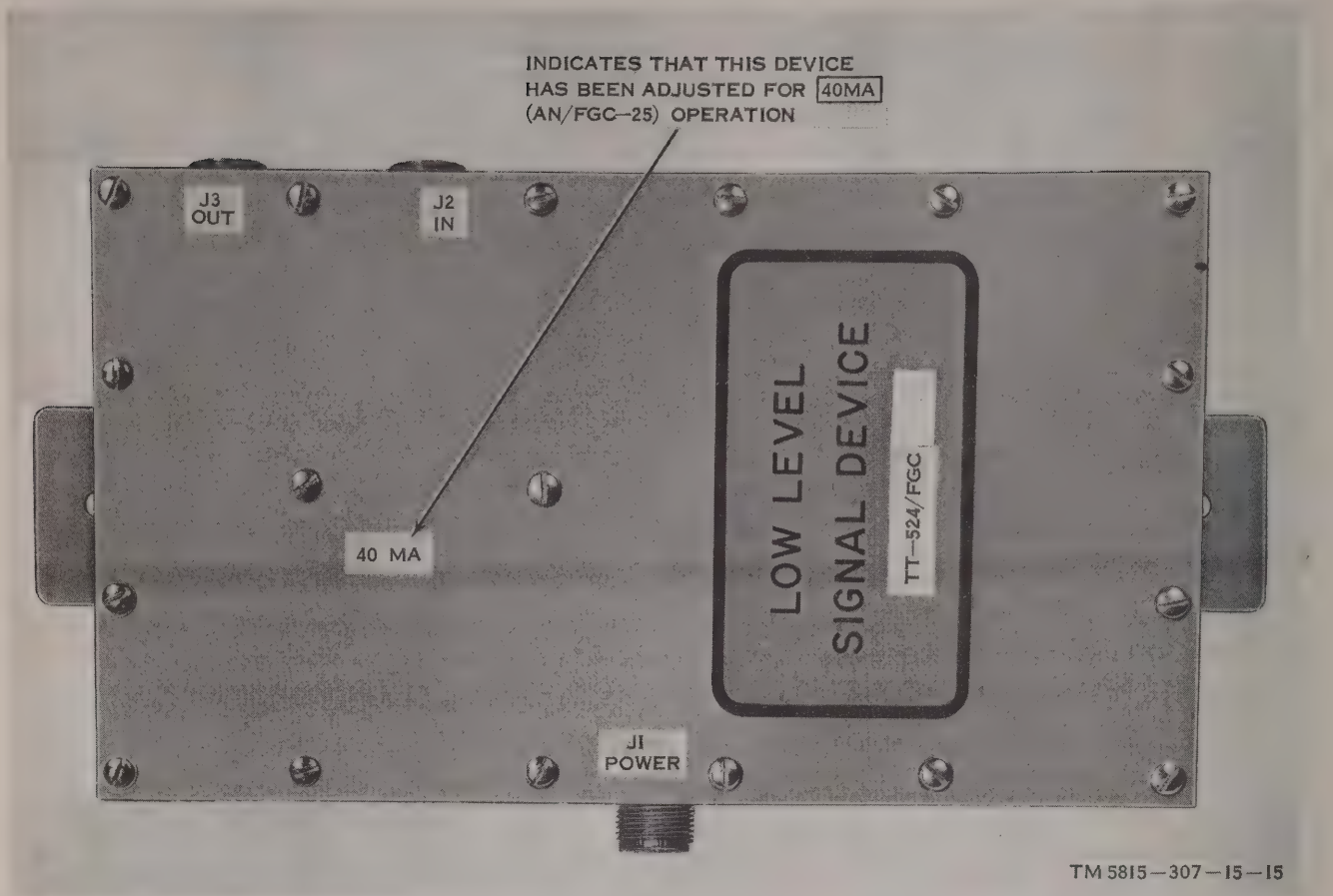


Figure 1-6. Low Level Signaling Device TT-524/FGC.

j. Receive Positions 1, 2, 3, and 4 (fig. 1-1). Receive positions 1, 2, 3, and 4 are located on the roadside wall, at the front of the van. The receive positions consist of monitor page printers (TT-98(*)/FG), monitor reperforators (TT-346(*)/FG), COMSEC equipments, and line units (TH-5/TG or TH-22/TG). Descriptions of receive positions (1-4) equipments are contained in their respective technical manuals (app. A).

k. Tape Preparation Positions 5, 6, 7, 8, and 9 (figs. 1-2 and 1-7). The tape preparation positions are located on the roadside wall, at the rear of the van. The tape preparation positions consist of the TT-524/FGC, tape preparation reperforator (TT-178(*)/FG), and tape preparation page printers (TT-119(*)/FG). Complete descriptions of the TT-178(*)/FG and the TT-119(*)/FG are contained in their respective technical manuals (app. A).

l. Supervisor's Position (fig. 1-3). The supervisor's position is located on the curbside wall, in the center of the van. It consists of the TT-523/GGC, supervisor's reperforator (TT-76(*)/GGC), and an 8-inch manual tape winder. A complete description of the TT-76(*)/GGC is contained in TM 11-5815-238-12.

m. Telephone (fig. 1-2). The telephone is removed from its canvas carrying case and installed in a metal bracket mounted on the worktable at the center curbside wall of the van. The canvas carrying case is stored in one of the drawers of the van. The telephone provides two-way communication in a system of similar or compatible equipments. Connections are made to binding posts on the front of the telephone, and terminate in a plug. The plug must be inserted into the PHONE jack (located adjacent to the telephone) to use the telephone. A complete description of Telephone Set TA-312/PT is provided in TM 11-5805-201-series.

n. Low Level Signaling Device TT-523/GGC- (fig. 1-8). The TT-523/GGC contains the circuitry required to control the rfi characteristics of the supervisor's reperforator. The TT-523/GGC is used for off-line operation only; that is, for the *local* preparation of tape when the reperforator is used in a tactical assemblage which handles and processes classified messages. The TT-

523 / GGC is mounted behind the transmitter-distributor of the TT-76(*) / GGC (figs. 1-10 and 1-11). A two-position switch on top of the TT-523 / GGC permits selection of on-line or off-line operation.

1-10. Miscellaneous Equipment

a. SECURITY DEJECT RELAY (fig. 1-4). A SECURITY DEJECT RELAY is mounted on the curbside wall of the van, between power distribution panel number 1 and the BLACK PATCH PANEL. The SECURITY DEJECT RELAY contains the circuitry which automatically controls the ac power to the COMSEC equipment. The SECURITY DEJECT RELAY remove ac power from the COMSEC equipments when the telephone plug is inserted into the PHONE jack. This arrangement may be bypassed by placing the specially protected DEJECT-BYPASS switch, adjacent to the telephone, in the BYPASS position.

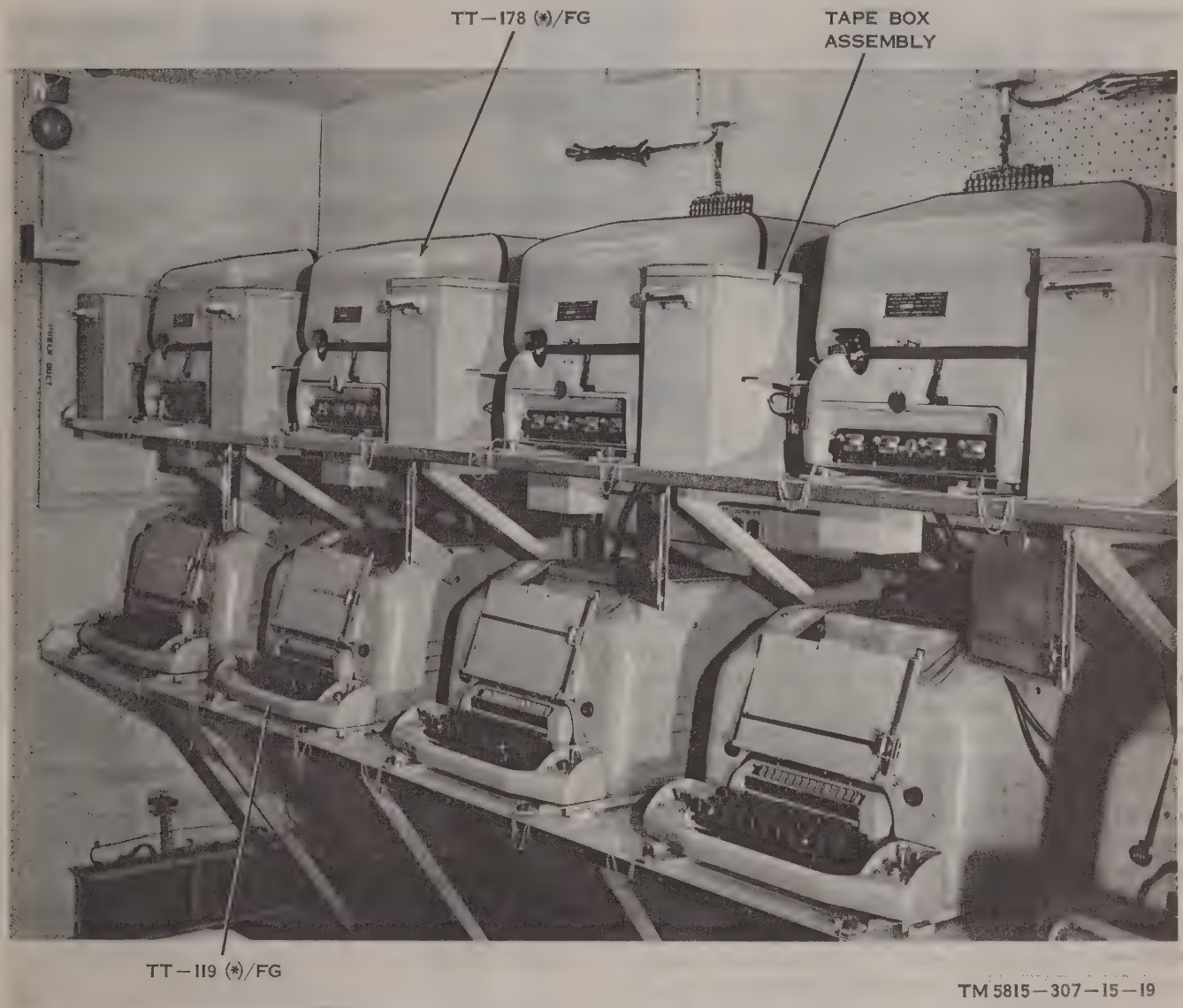


Figure 1-7. AN / MGC-22, part of roadside wall, tape preparation position.

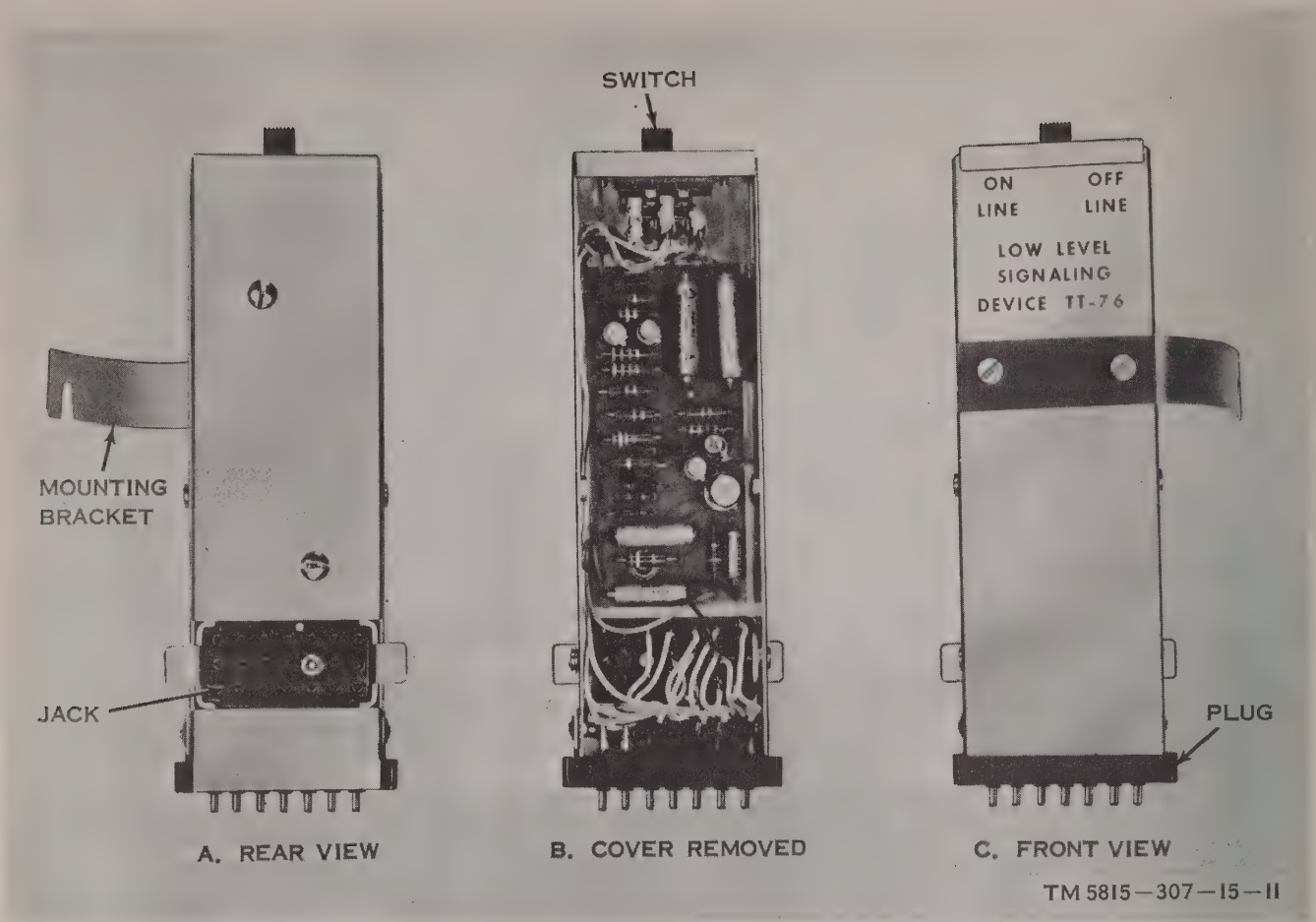


Figure 1-8. Low Level Signaling Device TT-523/GGC.

b. Security Deject Indicator (fig. 1-5). A security deject indicator (red lamp) is located near the sending equipment. The red indicator lamp, when lighted, indicates that the telephone is in use and that ac circuits to the COMSEC equipment are open. The security deject indicator is panel-marked as follows: CAUTION: RED LIGHT INDICATES SECURITY DEJECT IN OPERATION. DISCONNECT PHONE FOR TRANSMISSION.

c. DEJECT-BYPASS Switch. A DEJECT-BYPASS switch (fig. 1-4) is located on the curbside wall, near the telephone. It is specially protected with a shield to prevent accidental placement in the BYPASS position. The switch is part of the SECURITY DEJECT RELAY and security deject indicator circuit. When the DEJECT-BYPASS switch is in the BYPASS position, the SECURITY DEJECT RELAY circuitry is bypassed.

d. ZVA CONTROL BOX. A ZVA CONTROL BOX is mounted on the curbside wall of the van, behind the upper two TT-322/GGC's of the upper TD. The ZVA CONTROL BOX contains four ac power switches and four power ON indicators (neon bulbs). The four ac power switches control the ac power to the monitor reperforator receptacles. The neon bulbs, when lighted, indicate that power is applied to its associated receptacle.

e. Distribution Box J-1077A/U. When not in use, a J-1077A/U (dropline box) is mounted on the curbside wall, on the floor, near the rear of the van. The dropline box is used for testing, as a wire-head, and to drop extension circuits from a 26-pair cable. A complete description is included in TM 11-5805-204-15.

1-11. Equipment Modifications

The following modifications have been made to standard equipments for use in the AN/MGC-22.

a. Line Units (TH-5/TG or TH-22/TG).

(1) Removed from their transit cases.

(2) Removed from their covers.

(3) Modified by removing the home copy straps.

(4) Mounted in racks on the curbside wall of the van.

b. TD. The TD clutch magnet circuit has been modified to permit control of the TD by the COMSEC equipment. The distributor 77 armature latch has been removed and the LOOP and SET jacks have been strapped out of the circuit.

c. Tape Preparation Page Printer (fig. 1-9). The send and receive cables have been removed from terminal board TB2 (TB1 in some tape preparation page printers). Double shielded cables have been used to interconnect the TT-119(*) / FG and the TT-178(*) / FG as follows:

(1) Terminals 2 and 3 of TB2 (or TB1) on the TT-119(*) / FG to terminals A and B, LINE 3 of the TT-178(*) / FG.

(2) Terminal 4 of TB2 (or TB1) on the TT-119(*) / FG to terminal A of LINE 1 on the TT-178(*) / FG.

(3) Terminal 5 of TB2 (or TB1) on the TT-119(*) / FG to terminal B of LINE 2 on the TT-178(*) / FG.

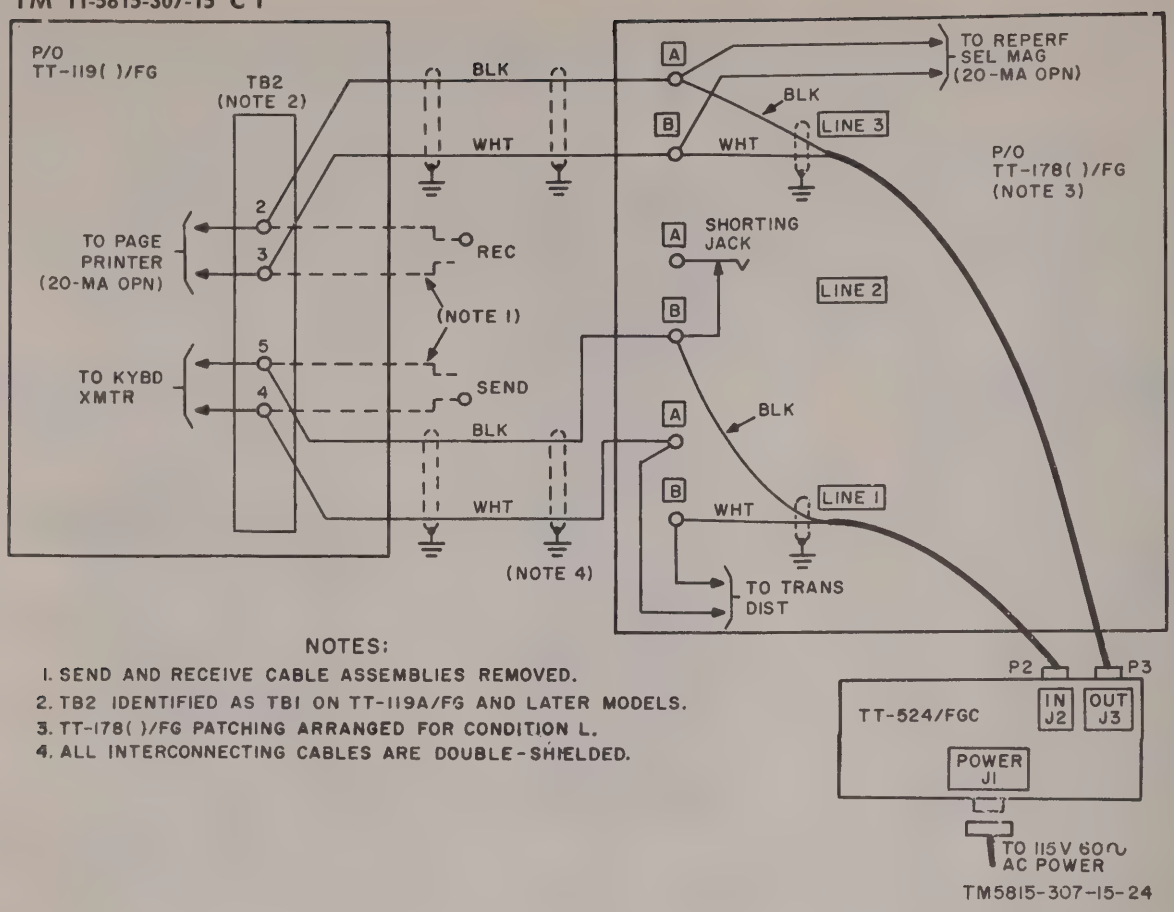


Figure 1–9. Tape preparation equipment interconnections.

d. Tape Preparation Reperforator. Double shielded cables and special connectors have been used to interconnect the TT–178(*)/FG and the TT–524/FGC, as follows:

(1) Terminals A and B of LINE 3 of the TT–178(*)/FG to J3 OUT receptacle on the TT–524/FGC.

(2) Terminal B of LINE 2 and terminal B of LINE 1 of the TT–178(*)/FG to J2 IN receptacle on the TT–524/FGC.

e. Tape Preparation Page Printer and Reperforator. The page printer (TT–119(*)/FG) and the reperforator (TT–178(*)/FG) have been interconnected as described in paragraph 9*b*(1) of TM 11–5815–244–35. The TT–178(*)/FG has been arranged for patch condition L as described in paragraph 17*l* of TM 11–5815–244–35P. On the TT–119(*)/FG bias fuse and terminal box, the SIGNAL and BIAS switches have been set to 20. On the TT–178(*)/FG rear control panel, the SIGNAL and the BIAS switches have been set to 20, the TEST CIRCUIT switch to 20 MA, and the LINE 1 and LINE 2 switches have been set to OFF.

f. Supervisor's Reperforator (fig. 1–10 and 1–11). A TT–523/GCC (para 1–9*n*) has been mounted physically behind the TD, and electrically between P7 and J7. Several modifications have been made to the supervisor's reperforator to accommodate the TT–523/GGC. The reperforator will be used in a 20-milliampere (ma) neutral circuit (the 20-ma to be supplied by the distant station). The following switch settings and connections have been made.

(1) The 20-BIAS/OFF-60 switch on the power supply and terminal unit of the reperforator has been placed in the 60 MA position.

(2) The plug from the selector magnet cable has been inserted into the SELECTOR MAGNET 20 MA socket on the power supply and terminal unit of the supervisor's reperforator.

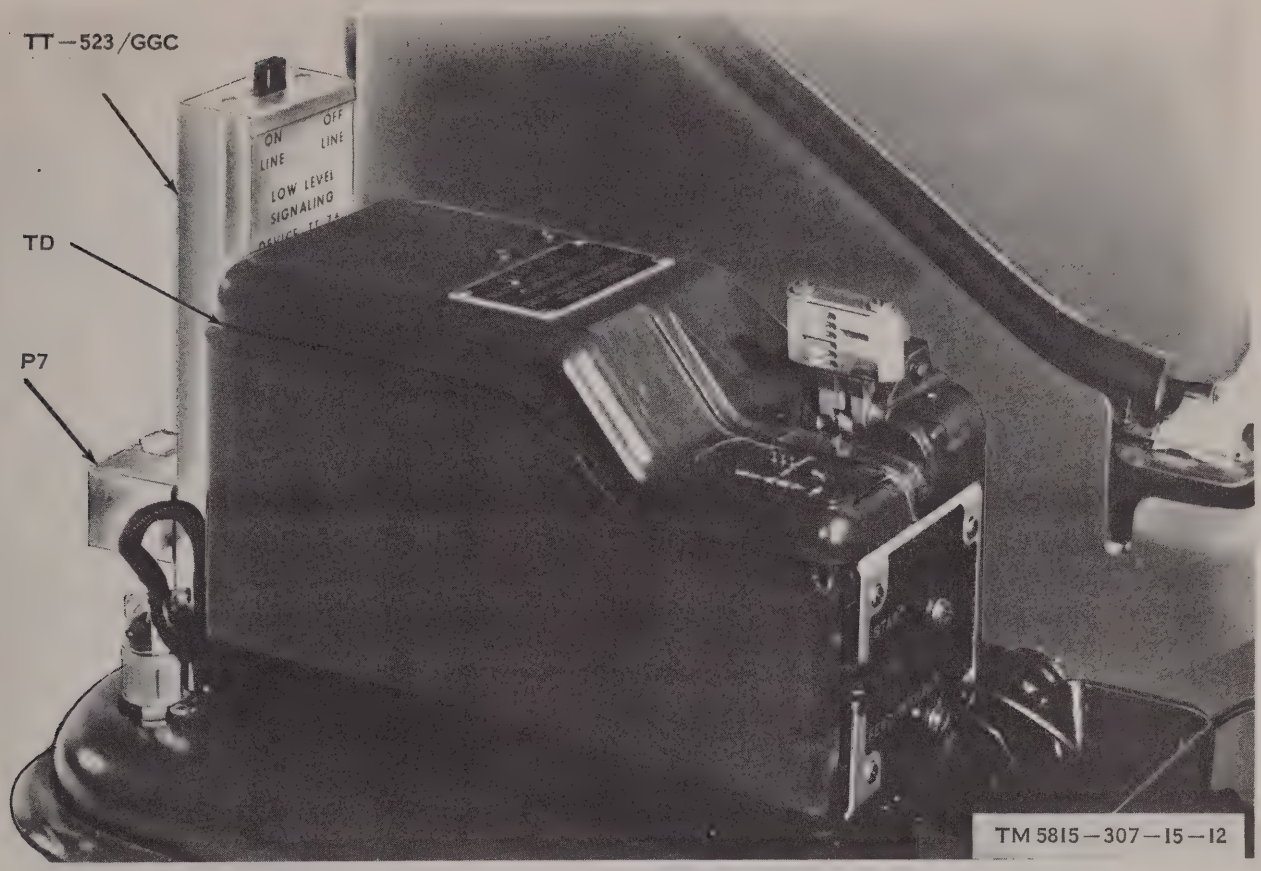


Figure 1-10. TT-523/GGC mounted of TT-76(*)/GGC, side view.

(3) A 5,600-ohm, 1-watt resistor has been placed between the BIAS TEST MA binding posts of the power supply and (1) terminal unit (fig. 1-12); the strap between the binding posts has been disconnected. The preliminary adjustments remain the same when the TT-523/GGC is installed except that the bias potentiometer setting check should be made with the milliammeter in series with the 5,600-ohm resistor. The reading should be 8.75 ma.

NOTE

The TT-523/GGC cannot be used with the plain model of the TT-76/GGC.

1-12. Administrative Storage

For procedures, format and records, and inspections required during administrative storage of this equipment, refer to TM 740-90-1.

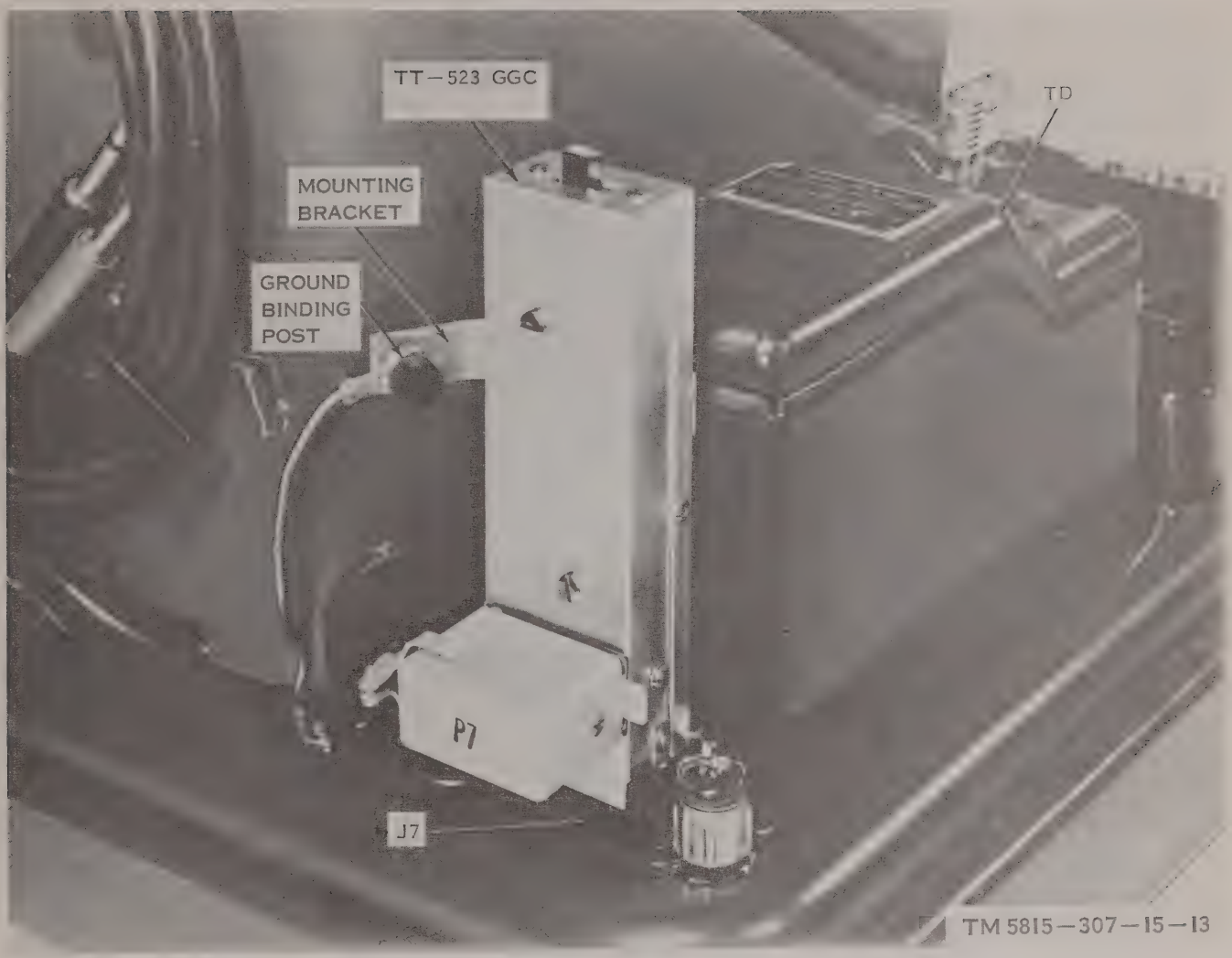


Figure 1–11. TT–523/GGC mounted on TT–76(*)/GGC, rear view.

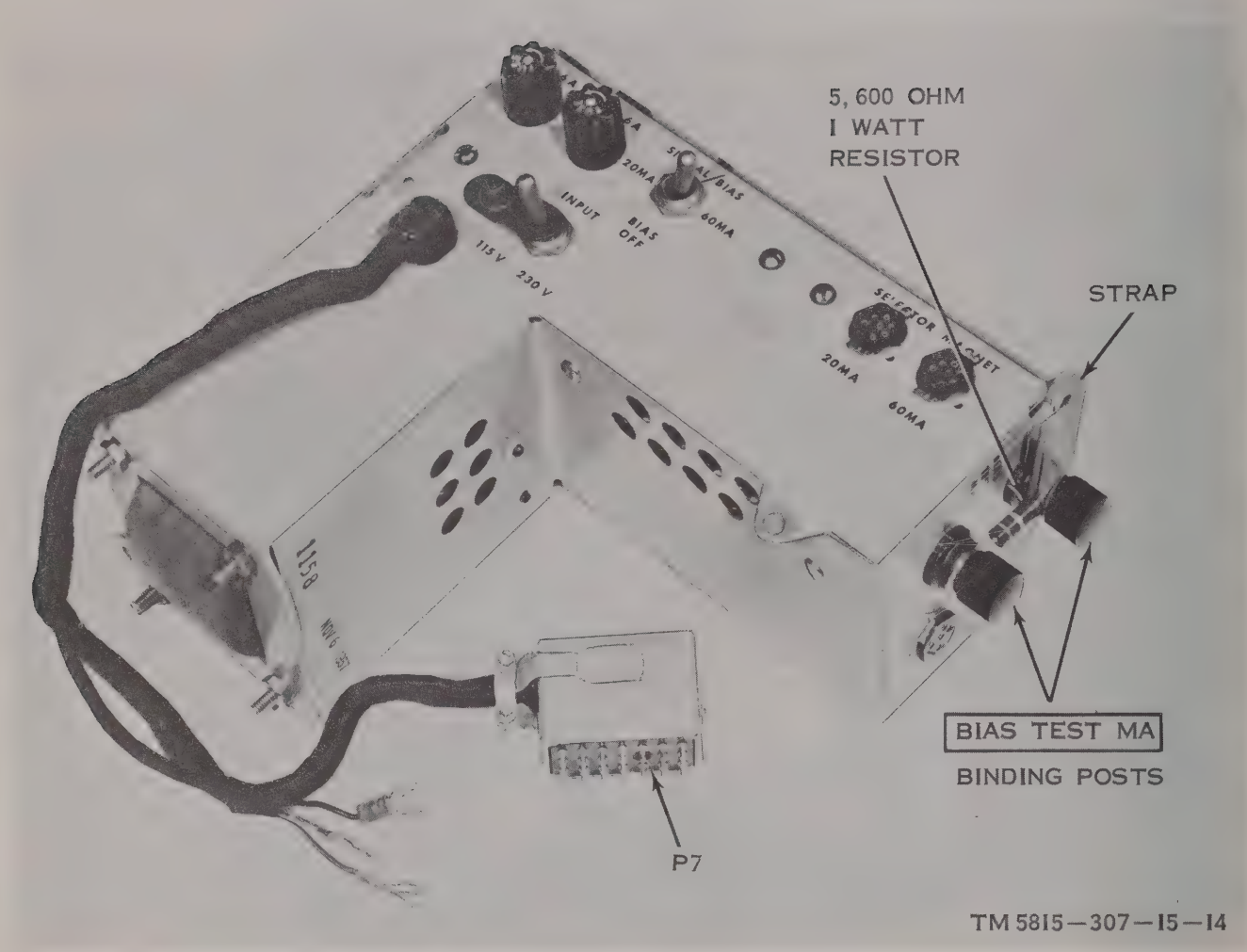


Figure 1–12. Power supply and terminal unit, TT–76(*)/GGC.

1–9. Differences in Models
(fig. 1–17)

Terminal, Telegraph TH–22/TG differs from earlier model Terminal, Telegraph TH–5/TG in the following details:

a. The TH–22/TG utilized transistorized circuitry as opposed to tube circuitry in the TH–5/TG.

b. In addition to the front panel controls, indciators, and fuses on the TH–5/TG, the TH–22/TG incorporates the following:

(1) A BOOST toggle switch, which, when positioned upward, amplifies the break-in signal.

(2) A THRESHOLD indicator lamp, which indicates a low signal or no signal present at the 4WS/TEL or 2W/R terminals.

(3) A BREAK-IN switch, which initiates a break-in function during telegraphic communications over a two-wire line facility.

(4) A RESET switch which disables the alarm circuit and restores the teletypewriter circuit for operation.

(5) A three-position screwdriver power switch, which allows for either 115-vac, 230-vac, or 26-vdc operation.

(6) A power ON/OFF switch.

(7) A power indicator lamp.

(8) A MODE ONE/MODE TWO switch, which, when positioned to MODE ONE, produces an output rate of 60, 75, or 100 words per minute. When positioned to MODE TWO, an output rate of 200 words per minute is produced.

(9) An EXT BAT receptacle for connecting a teletypewriter which provides loop current.

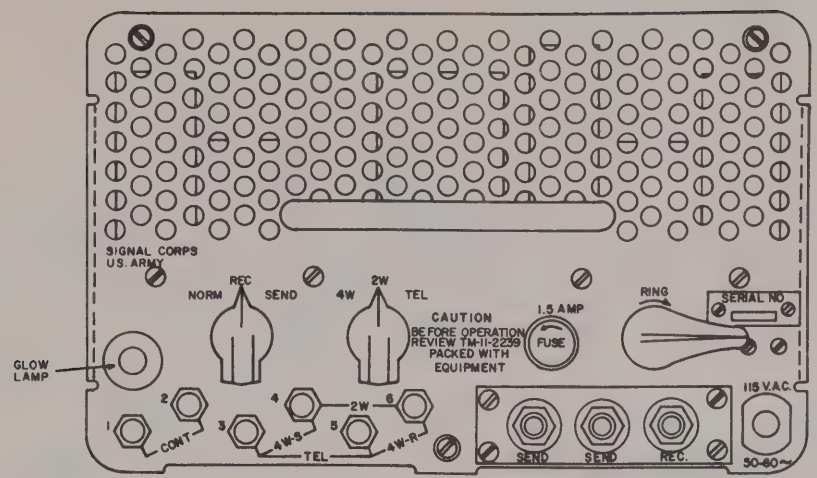
(10) A REC receptacle for connecting a teletypewriter which does not provide loop current.

(11) A VF–20 switch. In VF position, it produces an output signal frequency of 1232.5 Hz; in 20 position, it produces a 20-Hz frequency signal.

(12) 115/230-vac (1/4A) and 26-vdc (2A) fuseholders.

(13) There is no perforated heat dissipation area on the front panel.

TH-5/TG



TH-22/TG

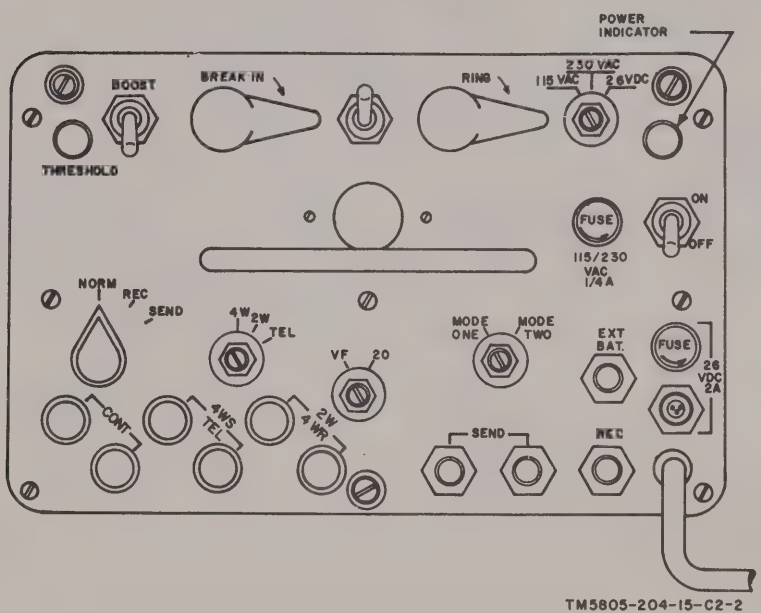


Figure 1-13 Differences in models.

CHAPTER 2

INSTALLATION

Section I. SERVICE UPON RECEIPT OF AN/MGC–22

2–1. Siting and Installation of Van

The site selected for the AN/MGC–22 depends on the terrain, system planning, and security considerations. Uncouple and level the van as instructed in *a* and *b* below.

a. Uncoupling Van. Uncouple the van from its tractor as follows:

(1) Apply the van brakes by operating the airbrake controller in the tractor cab.

(2) Place the wheel chocks under the rear wheels of the van.

(3) Loosen the fasteners that secure the bearing plates to the underside of the van and place a bearing plate on the ground below each landing gear (fig. 2–1).

Caution: **Be sure that the bearing plates rest on a firm surface. If necessary, use planks to insure that the weight of the front of the van does not cause the bearing plates to settle deeply into the earth.**

(4) Unhook the cranks from their hangers on the underside of the van.

(5) Insert a crank into each crankshaft (pushed in for high-speed operation) and station a man at each crank.

(6) Turn the cranks simultaneously until the wheels of each landing gear rest on the bearing plate.

(7) Close the cutoff cocks on the tractor airbrake hoses.

(8) Disconnect both airbrake hoses from the van by raising each hose coupling until it is free. Disconnecting the airbrake hoses automatically sets the airbrakes on the van.

(9) Couple the tractor hoses together. Place the dust caps on the van couplings.

(10) Disconnect the dome lights cable and the directional signal cable (if applicable) from the van and close the hinged cover of the lighting cable receptacle.

(11) Move the coupler release (on the fifth wheel of the tractor) to the unlocked position.

(12) Drive the tractor forward *slowly* and allow the van coupler to slide down the ramp of the fifth wheel. Be sure to move the tractor forward slowly to minimize the impact when the weight of the van is transferred to the landing gear and bearing plates.

b. Leveling Van.

(1) Remove the clevis pins A and B (fig. 2–2) which secure the side support arm and the leveling jack in the retracted position. Allow the leveling jack assembly to swing downward.

(2) Position the free end of the side support arm into the leveling jack bracket and insert clevis pins A and B as shown.

(3) Remove clevis pin C which secures the forward support arm to the underside of the van. Position the forward support arm on the leveling jack and insert clevis pin C as shown.

(4) Remove the leveling jack pads from their storage locations and position a pad at each leveling jack. Be sure the pads rest on firm, dry ground. If necessary, use planks to insure that the weight of the van does not cause the pads to settle deeply into the earth.

(5) Remove the lever bars adjacent to the pintle hook. Insert a lever bar into the hole at the base of each leveling jack and turn the lever bar until the leveling jack is seated in the leveling jack pad.

(6) Turn the landing gear cranks and the leveling jack lever bars as necessary until the levels on the van indicate that the van is level.

(7) Remove the entrance steps from the transit storage place and mount them in position at the rear door of the van.

2–2. Grounding Van

The van must be properly grounded *before* input power is connected. Select a grounding site that will not interfere with personnel movement or

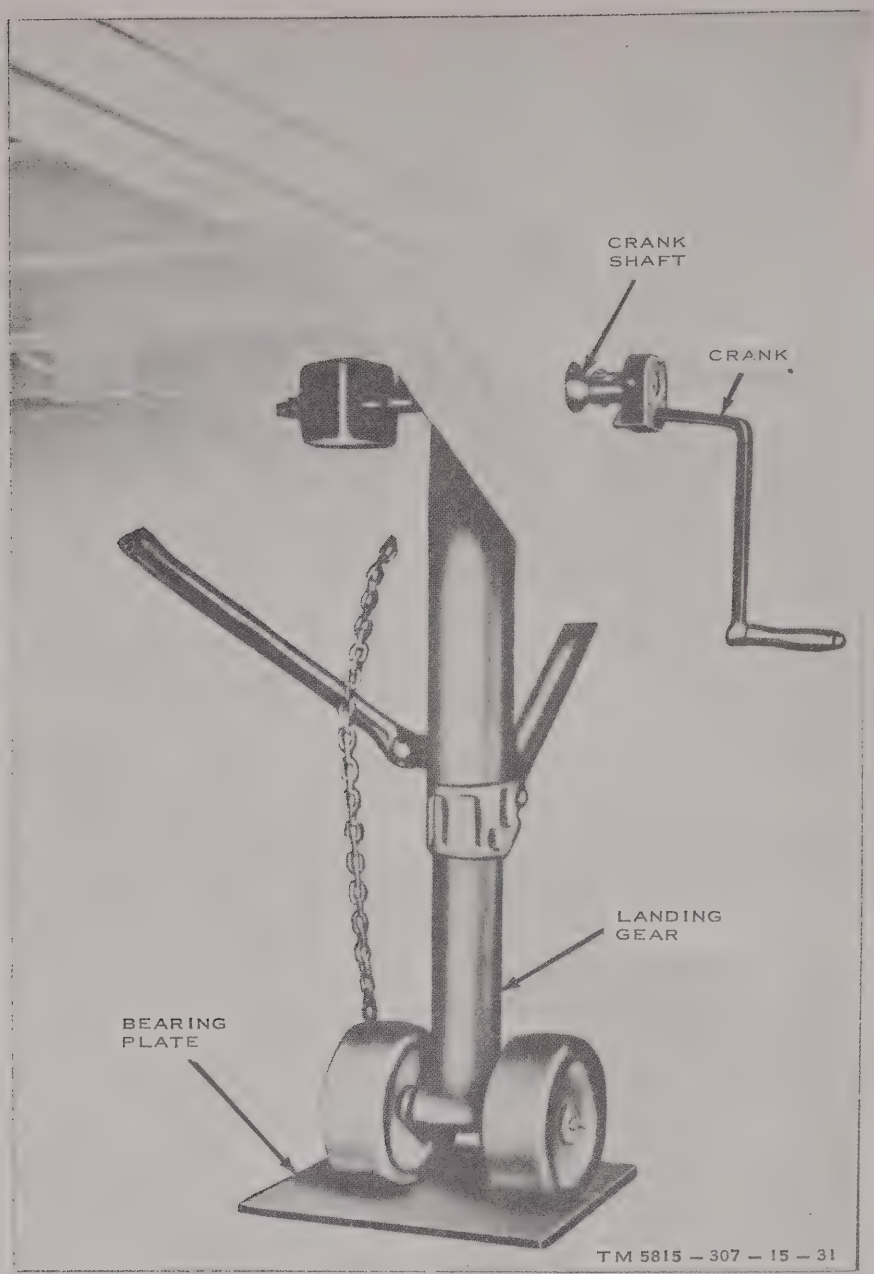


Figure 2–1. Van landing gear details.

with power and signal cables. Ground the van as follows:

a. If possible, select a grounding site within 8 feet of the power and signal entrance box. Scoop out a small hole about 6 inches deep.

b. Drive a clean 6-foot ground rod into the hole until the top of the ground rod is approximately 3 inches above the bottom of the hole. Saturate the area around the rod with water.

c. Remove a ground strap from the storage cabinet in the van. Connect one end of the strap to the ground rod, and the other end to the GROUND TERMINAL in the power and signal entrance box.

2–3. Power Connections
(fig. 2–3)

Caution: **Be sure to ground the van (para 2–2) before connecting power to the van. Failure to do so may result in severe electrical shock.**

a. Preparation.

(1) Operate the dome lights switch (located

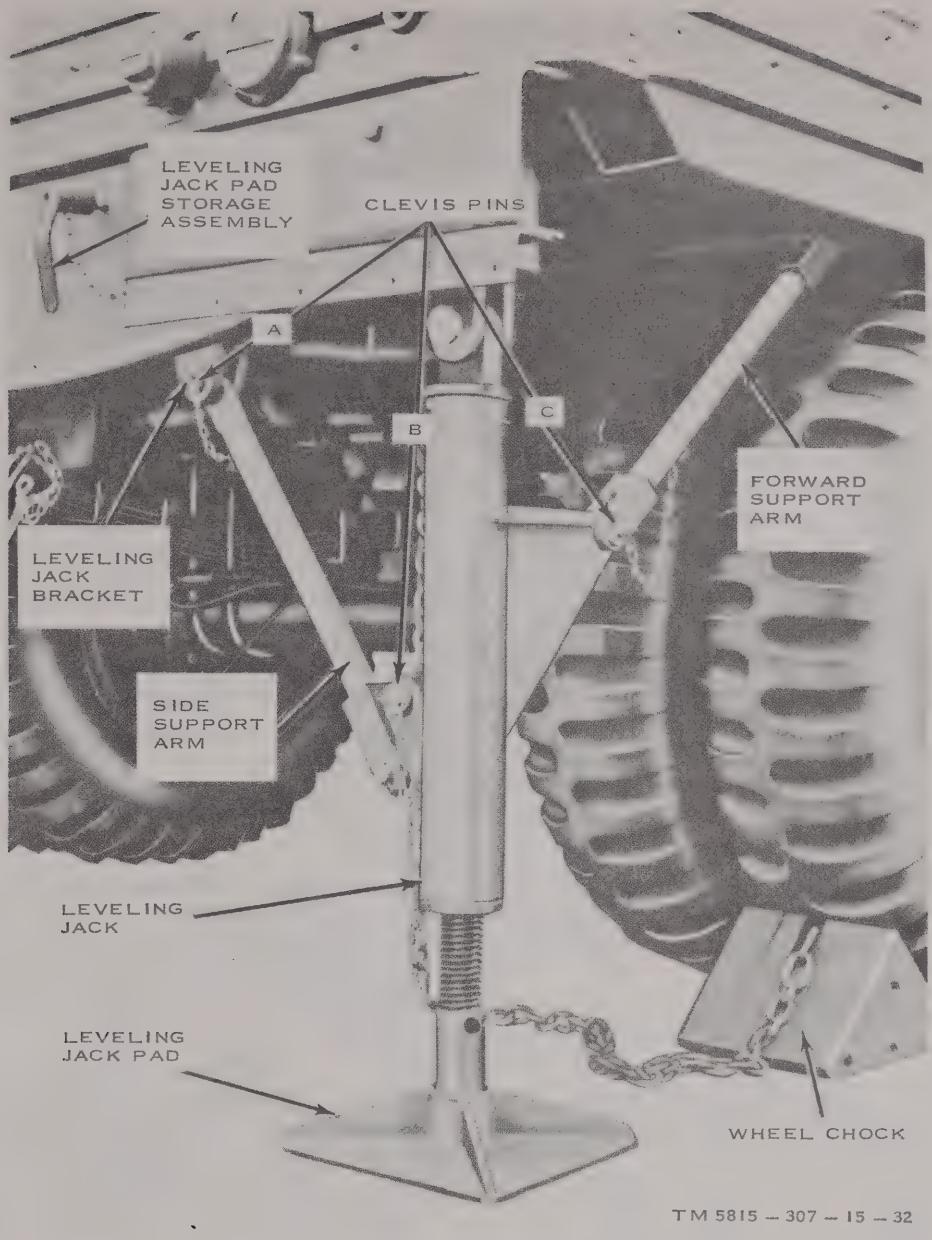


Figure 2–2. Van leveling jack extended.

on the wall to the right of the van rear door) to EMERG. BATT or TRACTOR.

(2) Check to be sure that all circuit breaker switches on the power distribution panels and power switches on the TH–5/TG switch panels and ZVA CONTROL BOX, lights switches (except the dome lights switch ((1) above), and power switches on the components within the van are in the OFF position.

(3) Remove the power cable assemblies and power cable stubs (if required) from the van. Unwind the power cable assemblies and remove the caps from both ends of the cable assemblies.

(4) Remove the caps from the three power input connectors in the power and signal entrance box on the curbside wall of the van.

b. Connection to Power Source. When a PU–407/M and a PU–408/M (or equal) are to be used to provide power for the AN/MGC–22, connect power to the van as described in (1) below; otherwise, follow the procedure given in (2) below.

(1) *Connection to generator sets.*

(*a*) Install and check the operation of Generator Set Diesel Engine, Trailer Mounted PU–407/M and Generator Set, Diesel, Truck Mounted PU–408/M described in their technical manual (app A). When the generator sets are op-

erating properly, place the generator set main circuit breakers to OFF.

(*b*) Remove the caps from the generator set distribution panel output receptacles.

(*c*) Use a 100-foot power cable assembly to connect generator set receptacle No. 1 to van power input connector PHASE A. Use another power cable assembly to connect generator set output receptacle No. 2 to van power input connector PHASE B. Use a third power cable assembly to connect generator set output receptacle No. 3 to van input connector PHASE C.

(2) *Connection to other power source.* If the generator set to be used does not include output connectors that are compatible with the connectors on the 100-foot power cable assemblies furnished with the AN/MGC–22, or if a nontransportable power source is used, proceed as follows:

(*a*) If one or more generator sets are to be used, install and check the operation of the generator sets as described in their technical manuals. When the generator sets are operating properly, set their main circuit breakers to OFF. If a fixed power source is used, operate an appropriate switch to disconnect power from the output terminals of the power source.

(*b*) Remove the cover from the connector end of each of the three power cable stubs furnished with the AN/MGC–22.

(*c*) Connect the *green* lead of each cable stub to a *ground* connection point at the power source.

(*d*) Connect the *white* lead of each cable stub to the *neutral* connection point at the power source.

(*e*) Connect the *black* lead of each power cable stub as follows:

1. If the power source provides 115-volt, two-wire, single-phase ac, connect the black leads to the hot output connection point.

2. If the power source provides 115/230-volt, three-wire, single-phase ac, connect two of the black leads to one of the hot output connection points of the power source and connect the other black lead to the other hot output connection point.

3. If the power source provides 120/208-volt, four-wire (neutral grounded), three-phase ac, connect the black lead of each power cable stub to a hot output terminal.

(*f*) Use the 100-foot power cables to connect the power cable stub connectors to the power input connectors on the curbside wall of the van.

Note. If a three-wire, single-phase power source is used, be sure that van power connectors PHASE A and PHASE B are connected to cable stubs that are connected to the same hot connection point of the power source, and that van power input connector PHASE C is connected to the power cable stub that connects to the other hot connection point of the power source. If a four-wire, three-phase power source is used, be sure that van connector PHASE A is connected to the phase A output of the power source; that van connector PHASE B is connected to the phase B output of the power source; and that van connector PHASE C is connected to the phase C output of the power source.

c. Applying Power to Van. When the power source connections are completed (*b* above), operate the appropriate switches on the generator set or power source to apply power to the van.

2–4. Twenty-Six Pair Cable Connection Procedures

If the distance between the AN/MGC–22 and the adjacent equipment to which it will be connected is more than 250 feet, couple two or more 26-pair cables together as described in *a* below. Connect the cables to the SIGNAL 1 receptacle in the power and signal entrance box as described in *b* below.

a. Coupling 26-Pair Cables Together (fig. 2–4).

***Caution:* Handle the 26-pair connectors carefully during the coupling and decoupling procedures. Do not force or twist the connectors during installation. Never drop or place an uncovered 26-pair connector on the ground.**

(1) *Cover removal* (*A*).

(*a*) With both hands, grasp the knurled collar on each end of the connector and turn the collars until the open position is reached.

(*b*) Disengage the cam on the top of the cover from the slot on the connector collar. Lift and remove the cover (B).

(2) *Coupling procedure.*

(*a*) Position the two 26-pair connectors so that the connector cams drop into the slots of the knurled collars, and the male contacts of each connector are aligned with the female contacts of the other connector (C, fig. 2–4).

(*b*) Carefully press the connectors together (D).

(*c*) Lock the connectors together by turning both knurled collars (E) simultaneously until the closed position is reached; lock the connector covers together.

(3) *Uncoupling procedures.*

(*a*) Unlock the 26-pair connectors by turning both knurled collars simultaneously until the open position is reached.

(*b*) Carefully pull the connectors apart.

(4) *Cover replacement.*

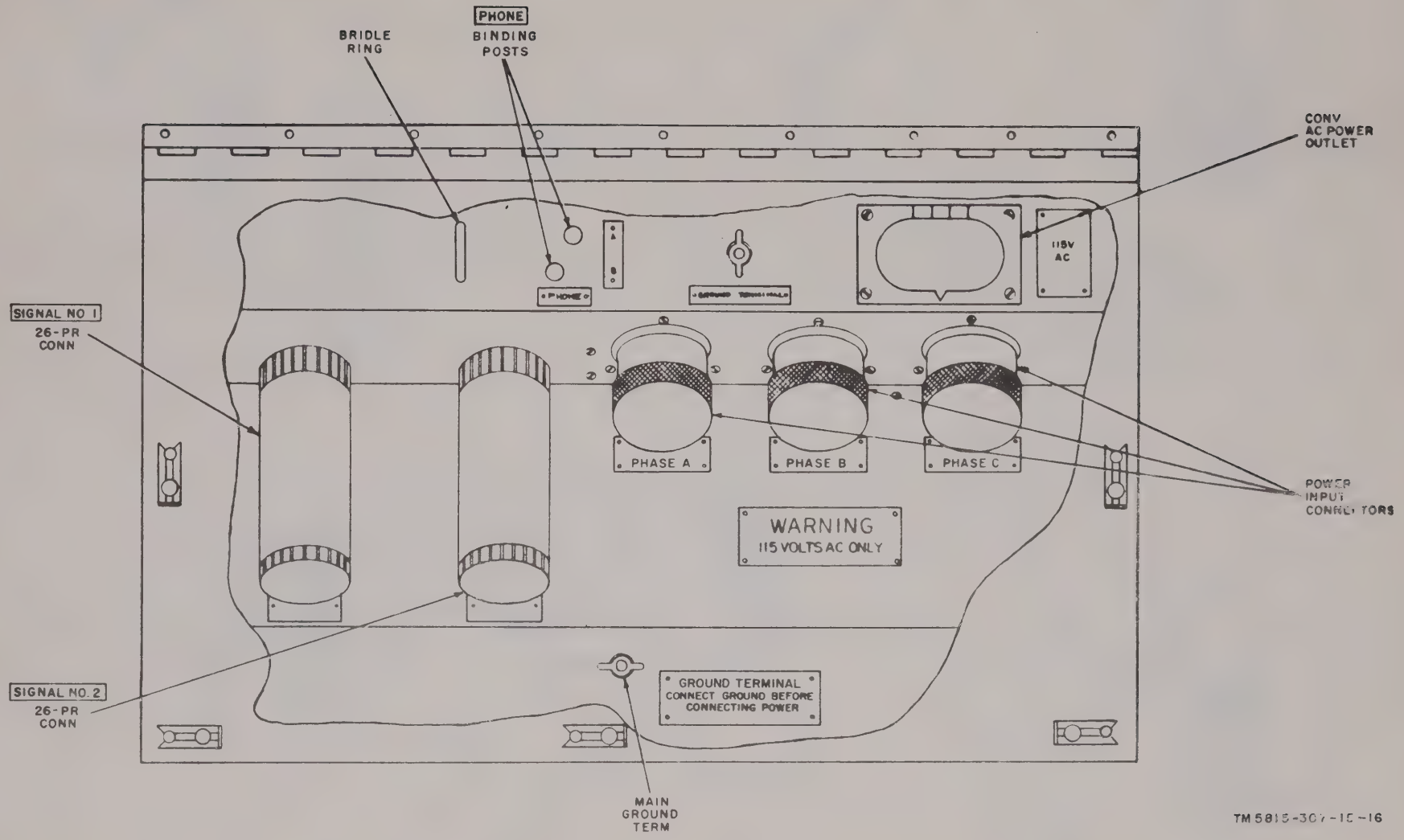


Figure 2–3. Power and signal entrance box.

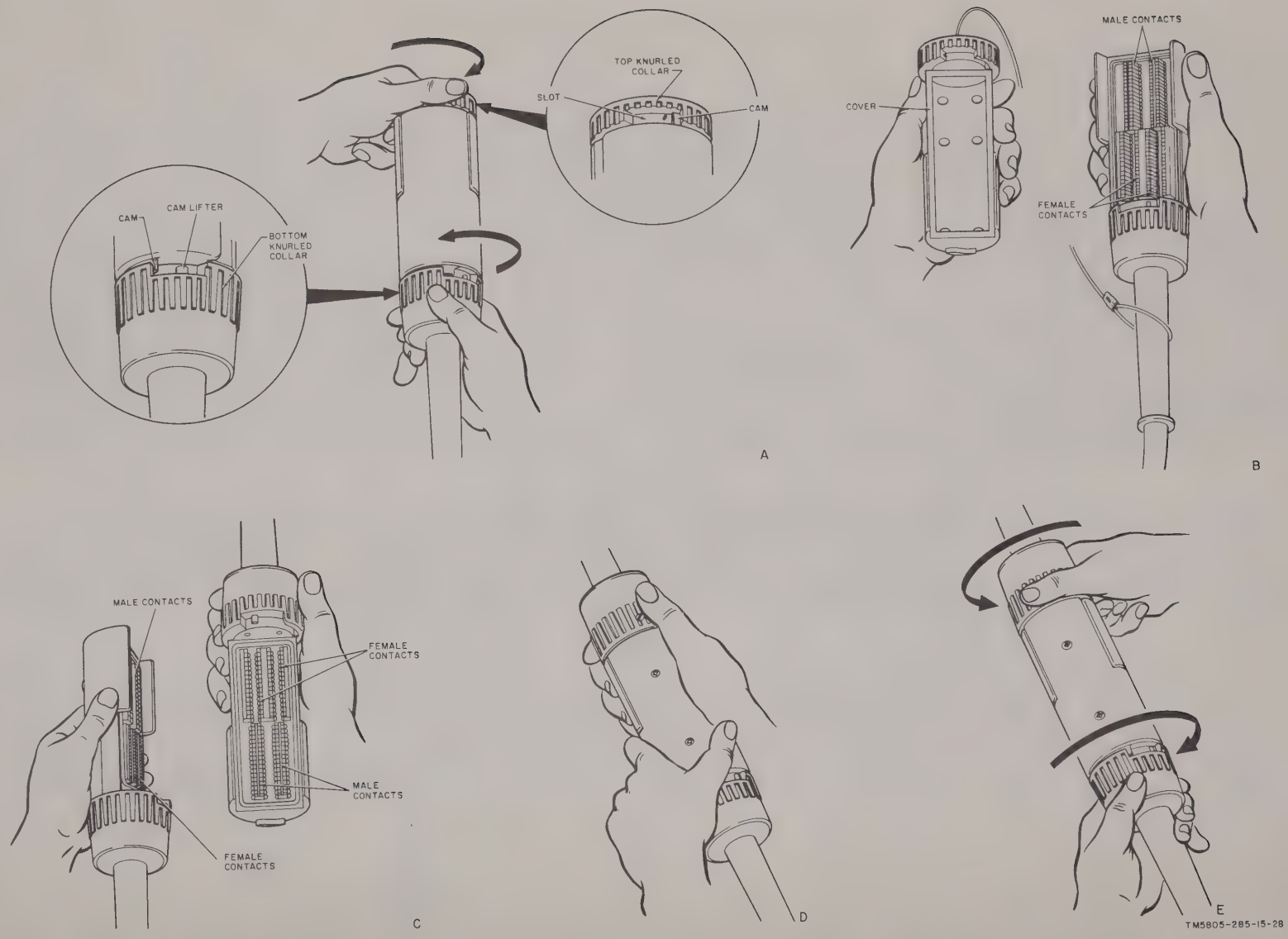


Figure 2–4. Coupling 26-pair connectors.

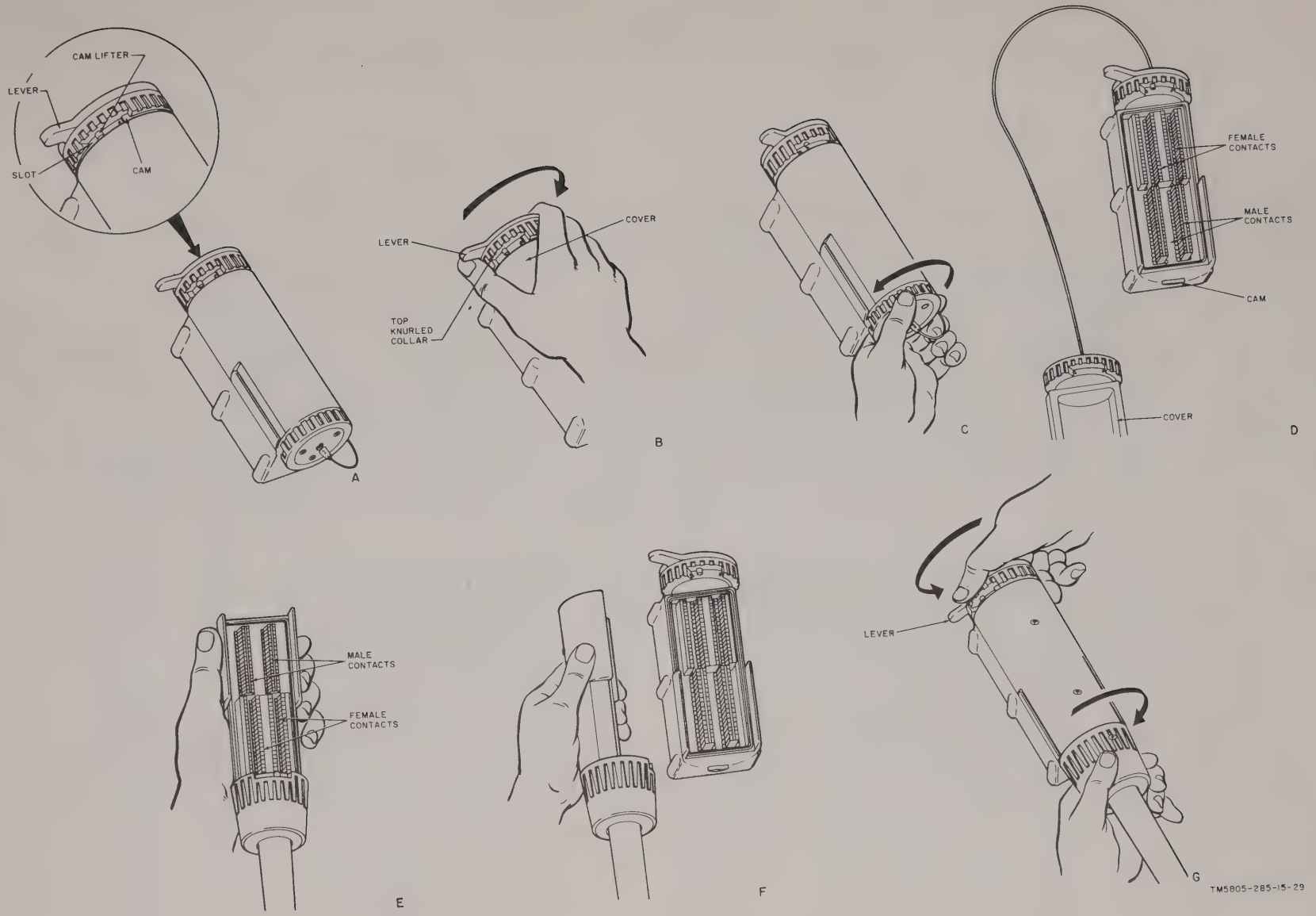


Figure 2–5. Coupling 26-pair connector to 26-pair receptacle.

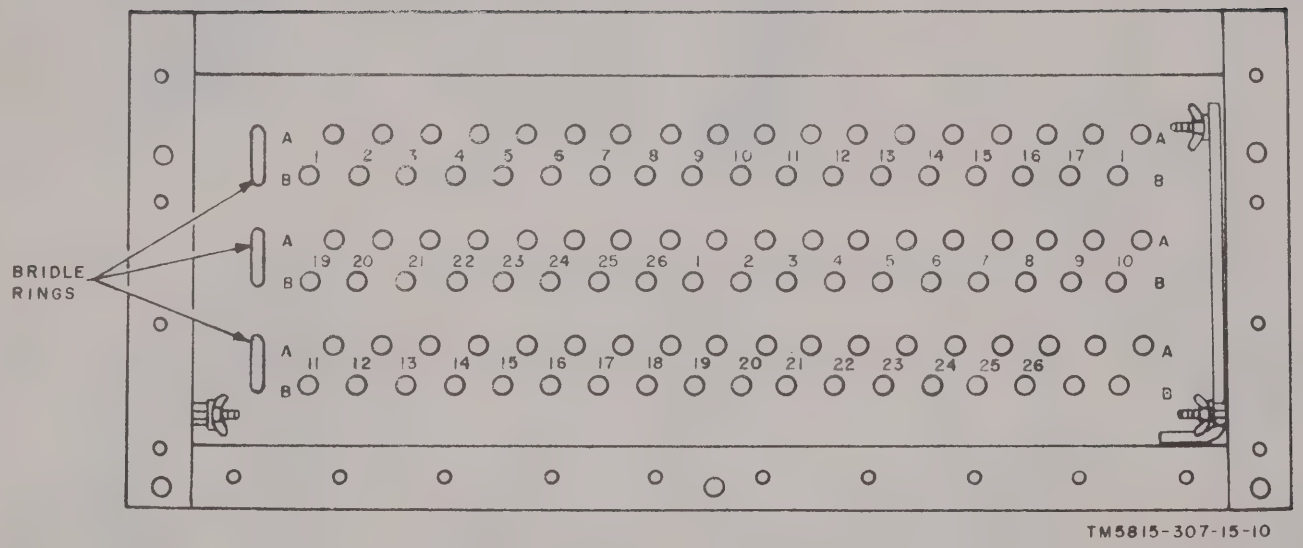


Figure 2–6. Binding post signal entrance box.

(*a*) Unlock the two connector covers.

(*b*) Position each cover on top of its associated 26-pair connector.

(*c*) Engage the cam on top of the cover in the slot in the connector collar.

(*d*) Lock the cover to the connector by turning both collars until the closed position is reached.

b. Coupling Cable 26-Pair Connector to Van 26-Pair Receptacle (fig. 2–5). The cover removal and replacement procedures for the van 26-pair receptacles are the same as those described for the cable 26-pair connectors (*a*(1) above).

Note. In the following instructions, the cable end of the connector is used as a reference for determining clockwise and counterclockwise rotations.

(1) *Connection cable connector to van receptacle.*

(*a*) Remove the connector and receptacle covers (A, B, and C) and lock them together.

(*b*) Position the 26-pair connector on the receptacle so that the cams (D) drop into the slots of the knurled collars, and the male contacts are aligned with the female contacts (E and F).

(*c*) Carefully press the connector into the receptacle.

(*d*) Turn the lever (F) on the knurled collar on the receptacle counterclockwise until the collar just engages the cam.

(*e*) Turn the knurled collar on the connector clockwise until the sleeve just engages the cam.

(*f*) Simultaneously turn the lever on the receptacle collar and the knurled collar on the connector until the position is reached.

(2) *Disconnecting procedure.*

(*a*) Simultaneously turn the lever on the receptacle collar and the knurled collar on the connector until the open position is reached.

(*b*) Carefully pull the connectors apart.

(*c*) Disconnect and replace the two covers (*a*(4) above).

2–5. Field Wire Connection Procedures (fig. 2–6)

Two sets of 26-pairs of binding posts are located in the binding post signal entrance box on the exterior curbside wall of the van. The first set of 26-pairs of binding posts are wired in parallel with the SIGNAL NO. 1 26-pair cable receptacle (mounted in adjacent power and signal entrance box). The second set of 26-pairs of binding posts are wired in parallel with the SIGNAL NO. 2 26-pair cable receptacle. An additional pair of binding posts is located in the power and signal entrance box to permit the connection of field wire to the van telephone circuit. Connect field wire as follows:

a. Remove one-half inch of insulation from the end of the wire to be connected.

b. Press downward on the top of the binding post to expose the wire slot in the post, place the bare wire into the slot, and release the binding post,

Section II. SIGNAL CONNECTIONS AND EQUIPMENT CHECKS

2–6. Teletypewriter Circuit Line Connections

The four vf, secure, full-duplex teletypewriter circuits in the van may be connected to external signal lines either at the SIGNAL NO. 1 26-pair receptacle in the power and signal entrance box or at binding posts in the binding post signal entrance box.

2–7. Telephone Circuit Line Connections

The telephone circuit (TA–312/PT) may be connected to the external signal line at the PHONE binding posts (fig. 2–3) in the power and signal entrance box, or at pair No. 26 of the SIGNAL NO. 1 26-pair receptacle or at binding post pair No. 26 (SIGNAL NO. 1) in the binding post signal entrance box.

2–8. Line Unit(TH–5/TG only) and Low-Level Signaling Devices Checks

a. Check to be sure that the ac power cord plugs of all equipment in the van are inserted into their proper receptacles.

b. Check to be sure that the telephone plug is not inserted into the PHONE jack (fig. 1–4) on the curbside wall of the van. Be sure the DEJECT-BYPASS switch is in the *off* position.

c. Check the connections to the line units and the TH–5/TG patch panels(not required when facility is equipped with TH–22/TG's).

(1) A patch cord should be connected between the SEND jack of each line unit and the TH–5/TG LOOP SEND jack of each associated TH–5/TG patch panel.

Note. Only the first four (POSITION 1, 2, 3, and 4) TH–5/TG's are used; the remaining line units are spares, ready for use.

(2) A patch cord should be connected between the REC jack of each line unit and the TH–5/TG LOOP REC jack of each associated TH–5/TG patch panel.

(3) A special purpose signal cable (black plug at one end, two spade terminals on leads at the other end) should be connected between the 4WS binding posts numbers 3 and 4 of each line unit and the TH–5/TG LINE 4WS jack of each associated TH–5/TG patch panel.

(4) A special purpose signal cable (red plug at one end, two spade terminals on leads at the other end) should be connected between the 4WR binding posts numbers 5 and 6 of each line unit and the TH–5/TG LINE 4WR jack of each associated TH–5/TG patch panel.

d. The NORM-SEND-REC switch on the front of the line unit should be in the NORM position.

e. Check to be sure that the TT–523/GGC is inserted into J7 of the supervisor's reperforator (TT–76(*)/GGC) and that P7 of the reperforator is inserted into the TT–523/GGC. Be sure the ON LINE-OFF LINE switch is in the OFF LINE position for local tape preparation (TT–76(*)/GGC SELECTOR switch in position 2 or 3).

f. Check to be sure that the TT–524/FGC power cord (connected to J1 POWER receptacle on the TT–524/FGC) is inserted into an ac outlet; that a cable is connected between J2 IN on the TT–524/FGC and binding posts B, LINE 2 and B, LINE 1 on the TT–178(*)/FG; that a cable is connected between J3 OUT on the TT–524/FGC and binding posts A and B, LINE 3 of the TT–178(*)/FG.

2–9. Energizing Ac Circuits

Prepare the AN/MGC–22 for operation as follows:

a. Apply power to the van (para 2–3). The neon lamps at power distribution panels No. 1, 2, and 3 should glow.

b. Place the MAIN circuit breaker switches at power distribution panels 1, 2, and 3 at ON.

c. Operate the BLACKOUT-BYPASS switch to BLACKOUT, if required.

d. Operate circuit breaker No. 1 on power distribution panel No. 1 to ON and place the ODD and EVEN fluorescent light switches to ON.

e. Check to be sure that the voltmeter on each power distribution panel indicates 115 volts ±10 and the frequency meters indicate 60 cycles per second (cps) ±2.

f. Operate all circuit breaker switches on the three power distribution panels to ON; the associated indicator should glow.

Note. It may be necessary to make a slight readjustment at the power source to obtain the proper frequency (60 Hz) and voltage (115 volts ac) when all equipments are turned on.

CHAPTER 3
OPERATION

3–1. Modes of Operation

The AN/MGC–22 includes facilities for four synchronous, secure, vf, full-duplex, low-level keying, teletypewriter circuits and five tape preparation positions. All tape preparation positions are equipped with low-level keying devices to control the rfi when preparing tapes. The low-level keying devices (fig. 1–6) are for *off-line* use only. Four line units are connected in the secure circuits with patch cords for vf line operation. Each circuit may be arranged for dc neutral operation but dc is not supplied by the AN/MGC–22 for signal line operation. Switches (VF-DC SECURE 1, SECURES 2, etc) on the BLACK PATCH PANEL (fig. 1–4) provide for selecting vf or dc operation when dc is provided. The black and the red patch panels provide flexibility for a number of line and position rearrangements. Refer to the signal schematic diagram (fig. 6–3) for the patching options available.

a. Send Circuits. The send circuits consist of four synchronous, secure, send positions equipped with four COMSEC equipments, two transmitter sets (AN/GGC–9) which provide automatic numbering, and contain two TD's per transmitter set, monitored by four mointor reperforators (TT–346(*)/FG) and the send portion of four line units (TH–5/TG). The monitor reperforator tape is stored on tape winders (RL–218/UG).

b. Receive Circuits. The receive circuits consist of four synchronous, secure, receive positions equipped with four COMSEC equipments, the receive portion of the same four line units (*a* above), four monitor page printers (TT–98(*)/FG), and four monitor reperforators (TT–346(*)/FG). The tape is accumulated in tape box assemblies mounted next to each receiver monitor reperforator.

c. Tape Preparation Positions. The five clear-text tape preparation positions (fig. 1–7) are equipped with five Low Level Signaling Devices TT–524/FGC's, five tape preparation page printers (TT–119(*)/FG), and five tape preparation reperforators (TT–178(*)/FG). The prepared tapes are accumulated in tape box assemblies mounted next to each tape preparation reperforator.

d. Supervisor's Position. The supervisor's position (fig. 1–2) is equipped with a Low Level Signaling Device TT–523/GGC (fig. 1–8, 1–10, and 1–11) and a supervisor's reperforator (TT–76(*)/GGC) which is used for tape preparation. The tapes prepared by the supervisor at this position are usually service-type messages, channel checks, notes, special headings for messages, etc.

3–2. Controls, Jacks, and Indicators

a. Power Distribution Panel No. 1 (fig. 3–1).

Control or indicator	*Description or function*
MAIN circuit breaker	Two, ganged, 100-ampere cir cuit breakers used to provide ac input overload protection; also used as main ON-OFF switch. Controls ac power to tributary circuit breakers.
Circuit breakers (tributary).	Two-position ON-OFF circuit breaker switches, each rated at 15 amperes. They provide overload protection as follows:
1	Vertibule and fluorescent lights.
2	Cipher units (Comsec equipments) 1 through 4.
3	AN/GGC–9 No. 1 and 2.
4	Convenience receptacles 4 and 5.
5	TTY positions 1 and 2.
6	TTY positions 3 and 4.
7	Heater 1.
8	Heater 2.
LINE VOLTAGE meter.	0 to 150 vac. Indicates input voltage for power distribu tion panel No. 1.
LINE CURRENT meter.	0 to 100 amp ac. Indicates total current drawn by power dis tribution panel No. 1.
LINE FREQUENCY meter.	Vibrating reed-type meter. Indicates frequency of ac for power distribution panel No. 1.
Neon lamp	NE–34. Glows when ac power is applied to input connector No. 1.
Neon lamps No. 1 through 8.	NE–45. Glow when associated circuit breaker is at ON.
Fuse	Provides overload protection to the auxiliary lights relay circuit.

b. Power Distribution Panel No. 2 (fig. 3–2).

Control or indicator	*Description or function*
MAIN circuit breaker	Two, ganged, 100-ampere circuit breakers used to provide ac input overload protection and as main ON-OFF switch. Controls ac power to tributary circuit breakers.
Circuit breakers (tributary).	Two position ON-OFF circuit breaker switches. All are rated at 15 amperes (except circuit breaker No. 1, which is rated at 50 amperes) and provide overload protection to:
1	Air conditioner No. 1.
2	Cipher units 5 through 8.
3	Send monitor reperforator (TT–346(*)/FG's).
4	Convenience receptacles 8 and 9.
5	Cipher set No. 1 and convenience receptacles 1 and 2.
6	Supervisor position and convenience receptacle 3.
7	Heater 3.
LINE VOLTAGE meter.	0–150 vac. Indicates input voltages for power distribution panel No. 2.
LINE CURRENT meter.	0–100 amp ac. Indicates total current drawn by power distribution panel No. 2.
LINE FREQUENCY meter.	Vibrating reed-type meter. Indicates frequency of ac for power distribution panel No. 2.
Neon lamp	NE–34. Glows when ac power is applied to input connector No. 2.
Neon lamps No. 1 through 7.	NE–45. Glow when associated circuit breaker is at ON.

c. Power Distribution Panel No. 3 (fig. 3–3).

Control or indicator	*Description or function*
MAIN circuit breaker	Two, ganged, 100-ampere circuit breakers used to provide ac input overload protection and as main ON-OFF switch. Controls as power to tributary circuit breakers.
Circuit breakers (tributary).	Two-position ON-OFF circuit breaker switches. All are rated at 15 amperes (except circuit breaker No. 1 which is rated at 50 amperes) and provide overload protection to:
1	Air conditioner No. 2.
2	TTY positions 8 and 9.
* 3	TH–5/TG positions 1 through 8.
4	TTY positions 5 and convenience receptacles 6 and 7.
5	TTY positions 6 and 7.
6	115 vac outside convenience receptacle.
7	Heater 4.
*	or TH–22/TG 1 thru 8.
LINE VOLTAGE meter.	0–150 vac. Indicates input voltage for power distribution panel No. 3.
LINE CURRENT meter.	0–100 amp ac. Indicates total current drawn by power distribution panel No. 3.
LINE FREQUENCY meter.	Vibration reed type meter. Indicates frequency of ac for power distribution panel No. 3.
Neon lamp	NE–34. Glows when ac power is applied to input connector No. 3.
Neon lamps No. 1 through 7.	NE–45. Glow when associated circuit breaker is at ON.

d. Lighting Controls and Indicators.

Control or indicator	*Description or function*
BLACKOUT-BYPASS switch.	Two-position switch that controls lights in van as follows:
	Sw pos — *Function* BYPASS — Permits van light circuits to be controlled by individual light switches. BLACKOUT — Permits van light circuits to be controlled by door microswitches.
VESTIBULE light swtich.	Two-position switch that controls vestibule light.
ODD and EVEN fluorescent lights switches.	Two-position switches that control fluorescent lights in van.
Dome lights switch	Three-position switch; controls application and selection of 24-vdc power for dome lights as follows:
	Sw pos — *Function* TRACTOR ON. — Connects dome lights to 24-volt battery of tractor. EMERG. BATT. — Connects dome lights to van batteries. Off — Removes power from dome lights.
BLACKOUT switches (door and vestibule).	Microswitches. Extinguish vestibule and interior van lights when both rear door and folding door are open and BLACKOUT-BYPASS switch is at BLACKOUT.

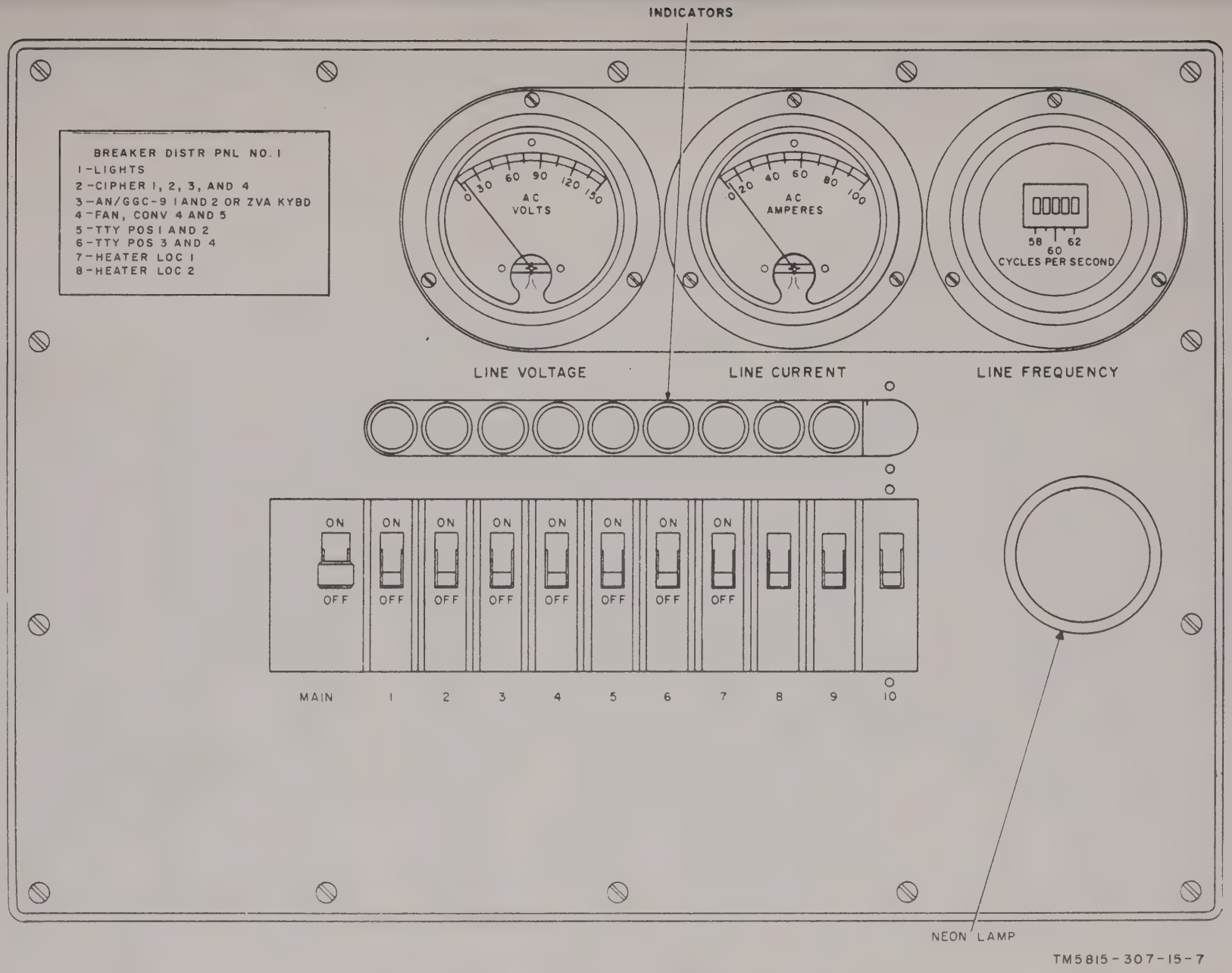


Figure 3–1. Power distribution panel No. 1.

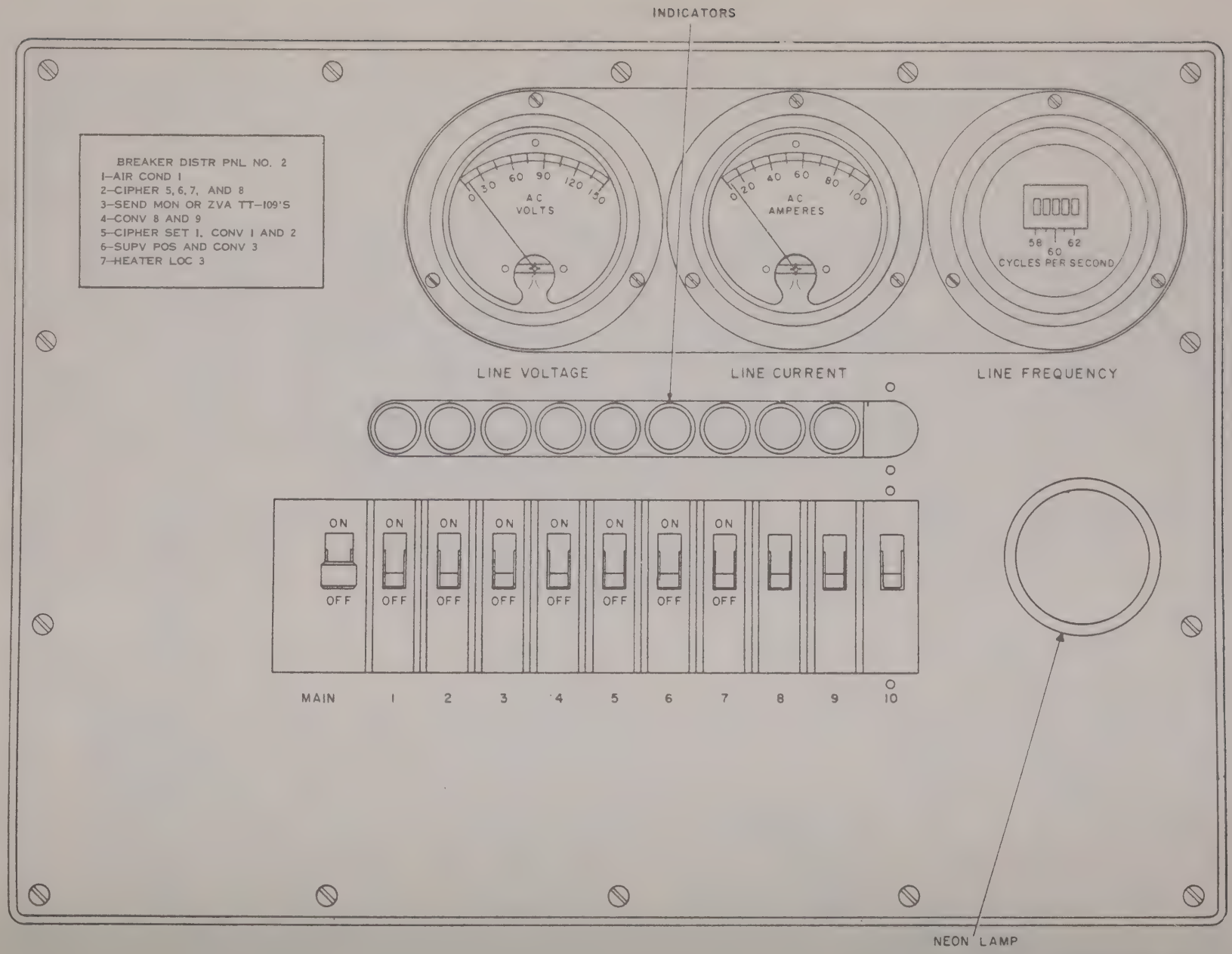
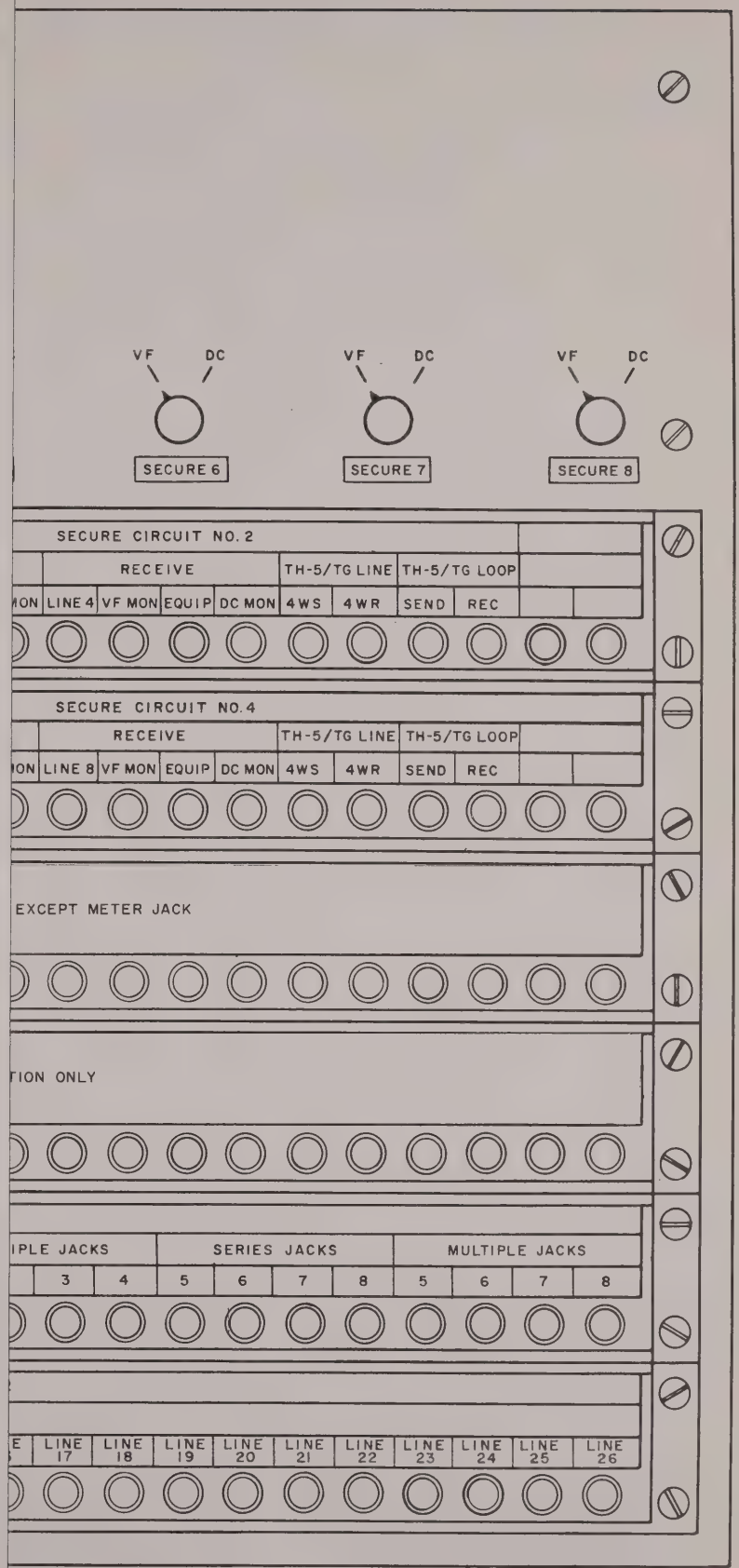


Figure 3-2. Power distribution panel No. 2.



front view.

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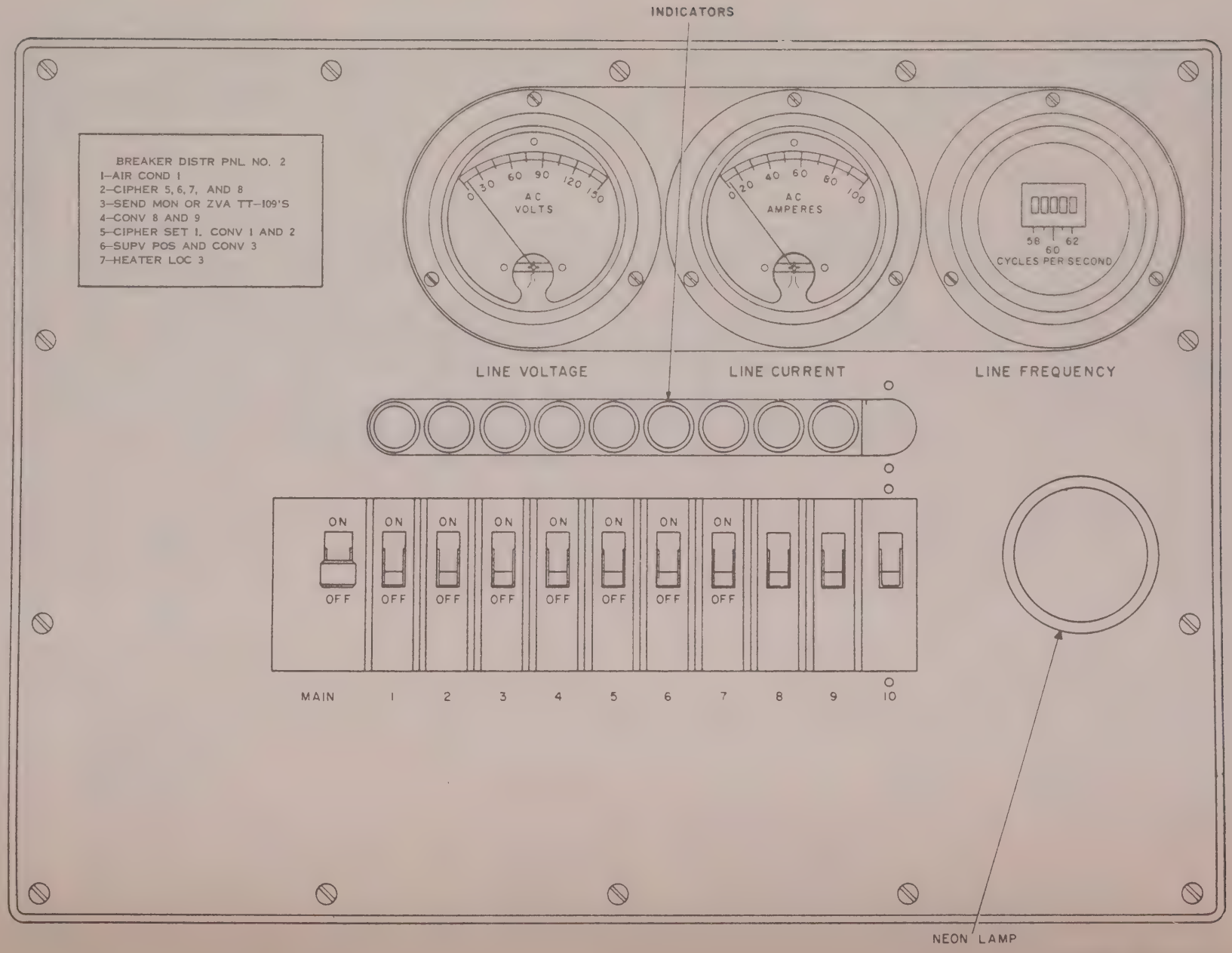

Figure 3–2. Power distribution panel No. 2.

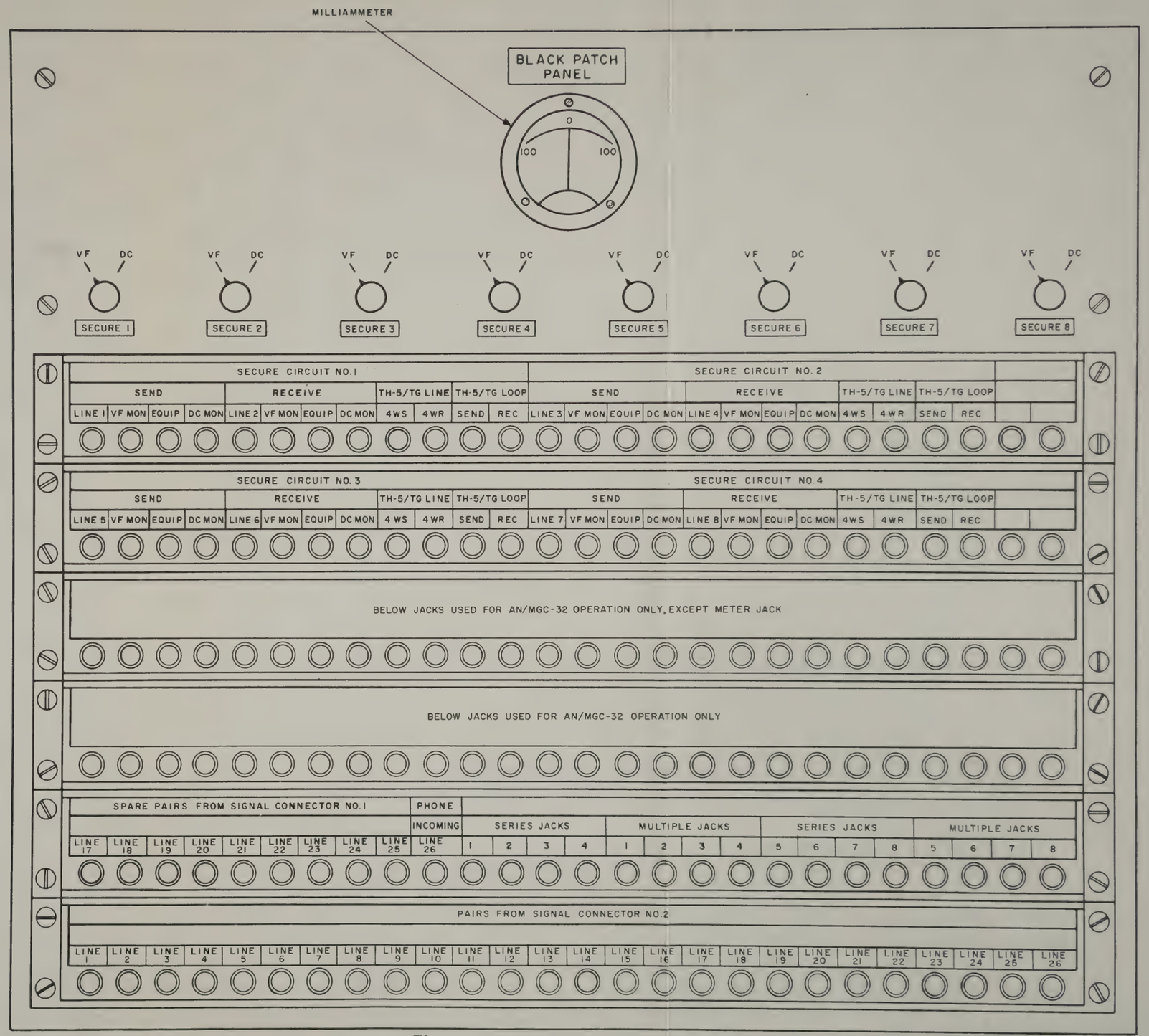

Figure 3–5. BLACK PATCH PANEL, front view.

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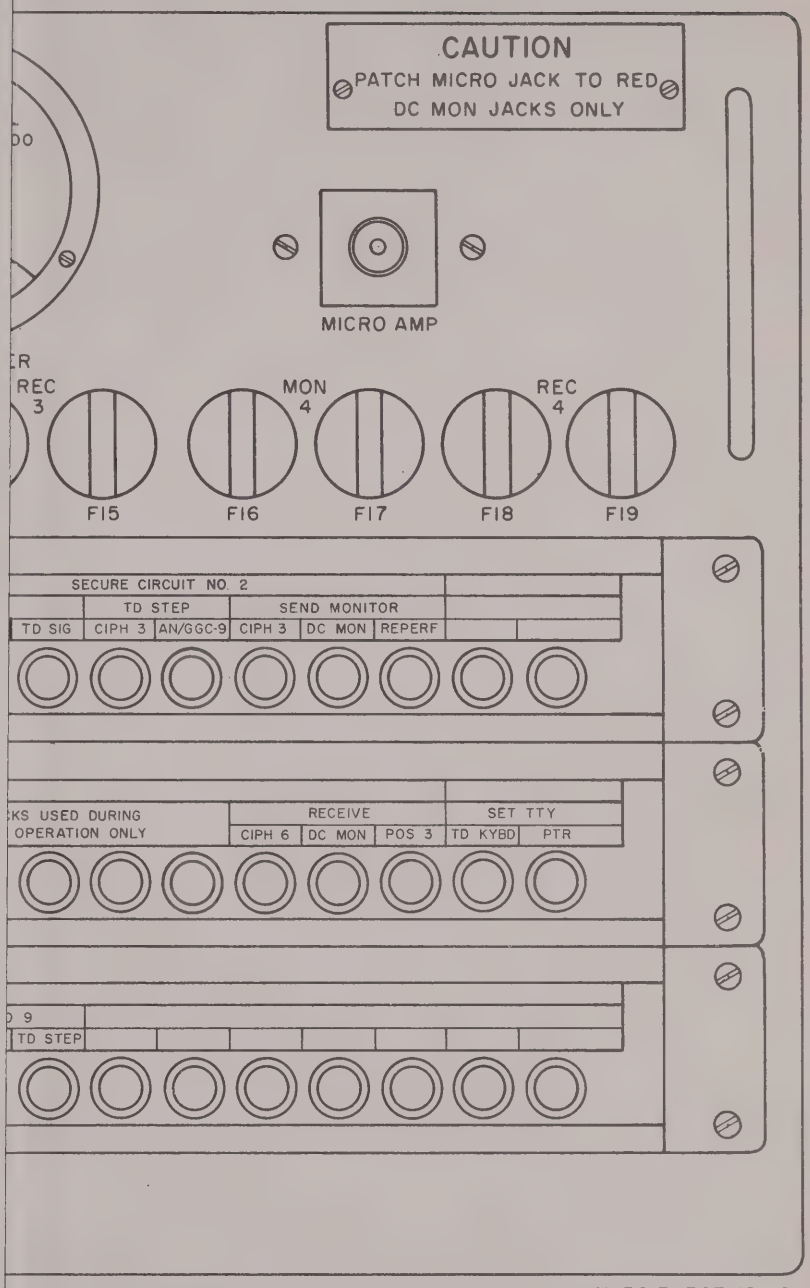

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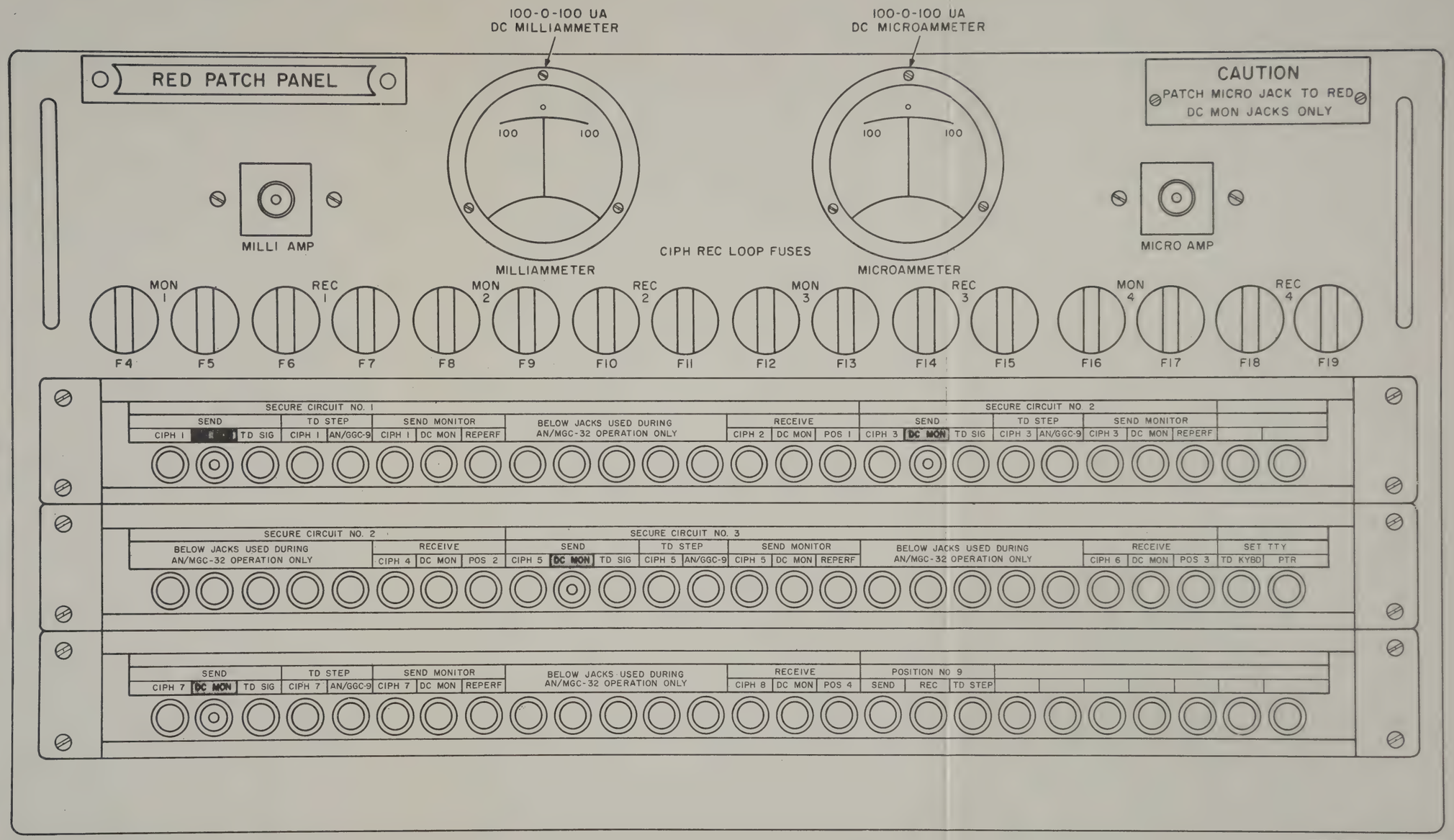

Figure 3–6. RED PATCH PANEL, front view.

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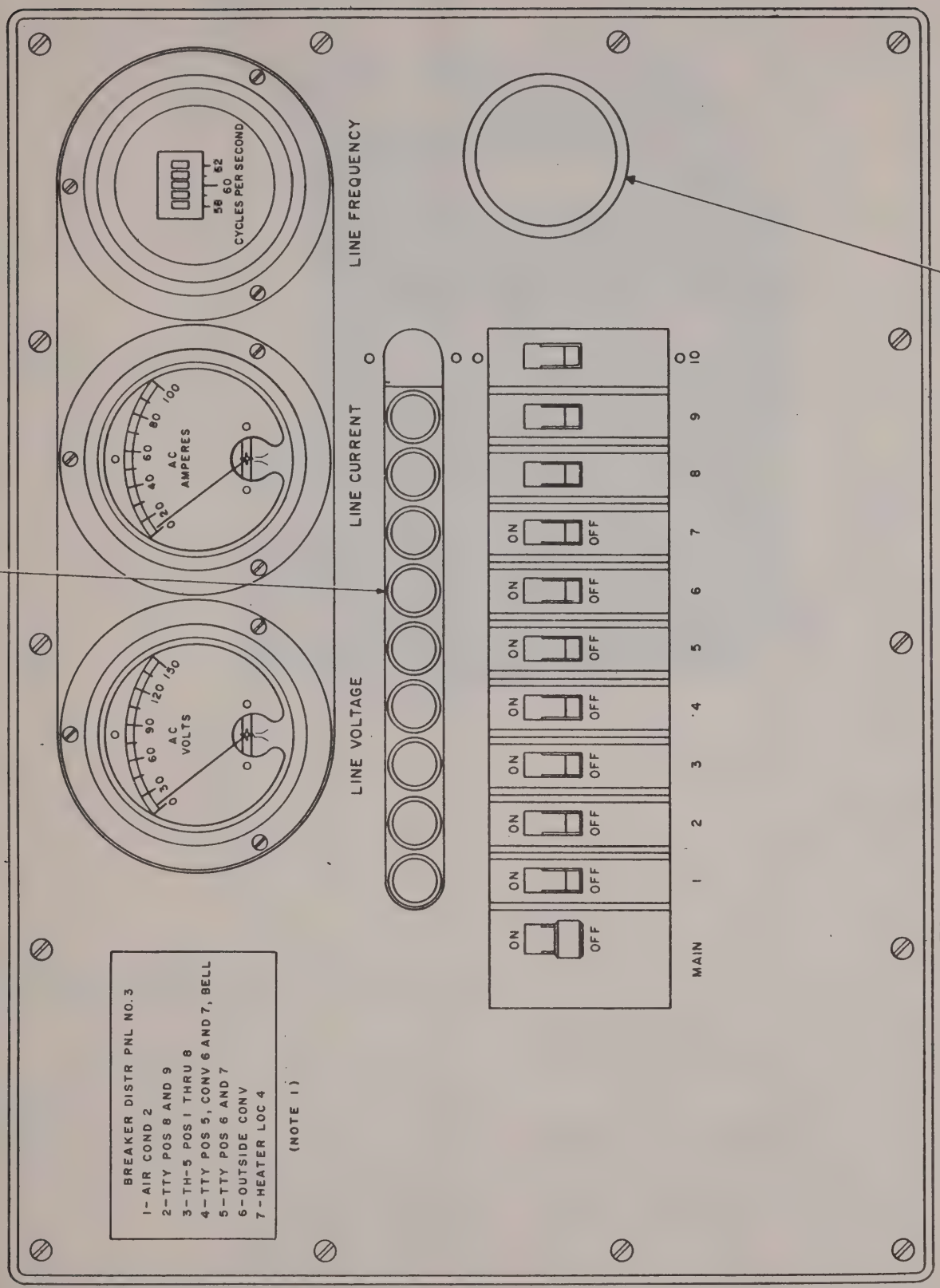


Figure 3-3. Power distribution panel No. 3.

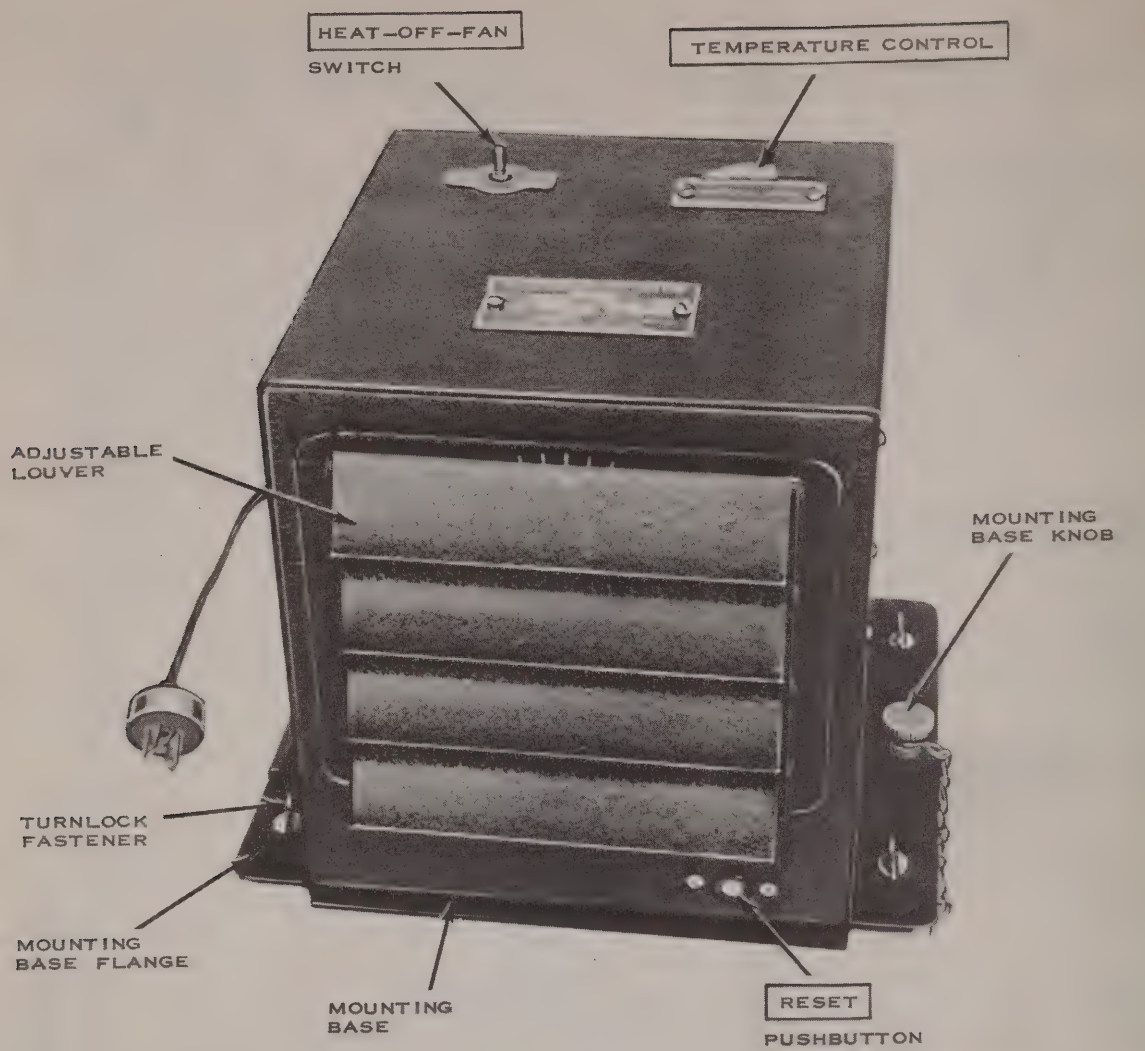


Figure 3-4. Heater, front view.

e. Heater Controls (fig. 3-4).

Control or indicator	*Description or function*
HEAT-OFF-FAN switch.	Three-position toggle switch; controls ac power to heater element and fan motor as follows:
	Pos — *Function*
	HEAT — Applies ac power to both heater element and motor.
	OFF — Disconnects ac power from heater element and fan.
	FAN — Applies ac power to fan only.
TEMPERATURE CONTROL.	*Description or function*: Manually adjustable thermostat; regulates amount of heat provided by heater element.
RESET pushbutton	Pushbutton-type switch; used to reset protective circuit breaker within heater.

f. BLACK PATCH PANEL (fig. 3-5).

Control, jack, or indicator	*Description or function*
Milliammeter	Indicates current (ma) when a patch cord is plugged into METER MA jack and any LINE 1, EQUIP, 4WS, 4WR, SEND, or REC jack.
SECURE 1 through SECURE 8 VF-DC switches.	Two-position switches.
	Pos — *Function*
	VF — Circurity is routed through vf line unit.
	DC — Circuitry is changed to bypass line unit for dc operation.

Control or indicator	*Description or function*
SEND LINE 1, 3, 5, and 7 jacks.	Cutoff jacks. When plug is inserted into jack, connection is provided to distant station; opens the send circuit back to the AN / MGC-22 send equipment.
RECEIVE LINE 2, 4, 6, and 8 jacks.	Cutoff jacks. When plug is inserted into jack, connection is provided to distant station; opens the receive circuit back to the AN / MGC-22 receive equipment.
SEND EQUIP jacks	Cutoff jacks. When plug is inserted into jack, connection is provided to send circuit in AN / MGC-22; opens circuit to distant station.
RECEIVE EQUIP jacks.	Cutoff jacks. When plug is inserted into jack, connection is provided to receive circuit in AN / MGC-22; opens circuit to distant station.
VF MON jacks	Provide a means of patching in parallel with line circuit.
DC MON jacks	Provide a means of patching in series with line circuit.
TH-5 / TG or TH-22 / TG LINE jacks:	
4 WS	When plug is inserted into jack, connection is made to the send output of line unit; opens circuit to distant station.
4 WR	When plug is inserted into jack connection is made to the rec input of line unit; opens circuit to distant station.
TH-5 / TG or TH-22 / TG LOOP jacks:	
SEND	When plug is inserted into jack connection is made to the send input of line unit; opens the send circuit back to the AN / MGC-22 send equipment.
REC	When plug is inserted into jack connection is made to the rec output of line unit; opens the receive circuit back to the AN / MGC-22 receive equipment.
METER MA jack	Provides a means of measuring dc line current.
SERIES JACKS 1 through 8.	Series-connected jacks; permit a series circuit arrangement.
MULTIPLE JACKS 1 through 8.	Parallel-connected jacks; permit a parallel circuit arrangement.
LINE 1 through LINE 25 jacks.	Pairs from signal connector No. 2.

g. RED PATCH PANEL (fig. 3-6).

Control, jack, or indicator	*Description or function*
Dc Milliameter	Indicates current (ma) when a patch cord is plugged into the MILLI AMP jack and any RECEIVE DC MON, CIPH, or POS jack.
Dc microammeter	Indicates current in microamperes (ua) when a patch cord is plugged into the MICRO AMP jack and the DC MON (red) jack.
Fuses (F4 through F19).	Provide overload protection in the send monitor and the receive circuits.
MICRO AMP jack	Provides for patching microammeter in series with send circuit.
MILLI AMP jack	Provides for patching milliammeter in series with receive circuit.
SEND jacks:	The following functions occur when a plug is plugged into the jack:
CIPH	Provide connection to cipher send equipment; open circuit back to TD.
DC MON (red)	Provide for patching the microammeter in series with the send circuit.
TB SIG	Provide connection to TD. Open circuit to the cipher send equipment.
TD STEP jacks:	
CIPH 1	Provide connection to TD STEP cipher send equipment; open circuit back to transmitter set TD STEP equipment.
AN / GGC-9	Provide connection to TD STEP equipment; open circuit to TD STEP cipher send equipment.
SEND MONITOR jacks:	
CIPH 1	Provide connection to REC cipher send monitor output; open circuit to send cipher monitor reperforator.
DC MON	Provide for patching in series with send monitor circuit.
REPERF	Provide connection to monitor reperforator; open circuit to REC cipher send monitor output.
RECEIVE jacks:	
CIPH 2	Provide connection to receive cipher output; open circuit to receive monitor reperforator and page printer.
DC MON	Provide for patching in series with receive monitor circuit.
POS 1 jacks	Provide connection to receive monitor reperforator and page printer; open circuit to receive cipher output.
POSITION NO. 9 jacks.	Not used in AN / MGC-22.

h. TH-5 / TG Switch Panel (fig. 1-4) (Not Used With TH-22 / TG).

Control or indicator	*Description or function*
POS 1 through 8 switches.	Two-position toggle switches. ON position applies power to TH-5 / TG ac receptacle. OFF position removes power from TH-5 / TG ac receptacle.
Indicators	Neon lamps NE-51. Neon lamp glows when ac power is applied to associated TH-5 / TG receptacle.

i. TH-5 / TG Patch Panel (fig. 1-4) (Not Used With TH-22 / TG).

Jack	*Description or function*
LINE:	
4 WS	Provides for patching vf line output of the TH-5 / TG to a line circuit.
4 WR	Provides for patching vf line circuit to input of TH-5 / TG.

Control or indicator	*Description or function*
LOOP:	
SEND	Provides for patching TH-5/TG SEND jack to EQUIP jack.
REC	Provides for patching TH-5/TG REC jack to EQUIP jack.

j. SET POS. Patch Panel.

Jack	*Description or function*
TD SIG	Permits connection of TT-23(*)/FG to TD KYBD jack of RED PATCH PANEL.
KYBD	Permits connection of keyboard of TT-98(*)/FG to TD KYBD jack of RED PATCH PANEL.
PTR	Permits connection of page printer of TT-98(*)/FG to PTR jack of RED PATCH PANEL.

k. ZVA CONTROL BOX (fig. 3-7).

Control or indicator	*Description function*
Power switches	Two-position toggle switches. ON position applies ac power to monitor reperforator receptacles. OFF position removes ac power from monitor reperforator receptacles.
Power on indicators	When lighted, indicate power is applied to respective receptacle.

l. DEJECT-BYPASS Switch. In the OFF position, ac power is removed from the COMSEC equipments when the telephone plug is inserted into the PHONE jack. In the ON position, the SECURITY DEJECT RELAY circuit is bypassed and insertion of the telephone plug into the PHONE jack has no effect on the ac power supplied to the COMSEC equipments.

3-3. Operating Heaters and Air Conditioners

a. Heaters. Insert the power cord connector plug into the appropriate heater receptacle and operate the HEAT-OFF-FAN switch to the desired position. If the switch is set to HEAT, adjust the TEMPERATURE CONTROL to the desired temperature setting.

b. Air Conditioners. Refer to TM 5-4120-205-12 for air conditioner operating instructions.

3-4. Operating Procedures

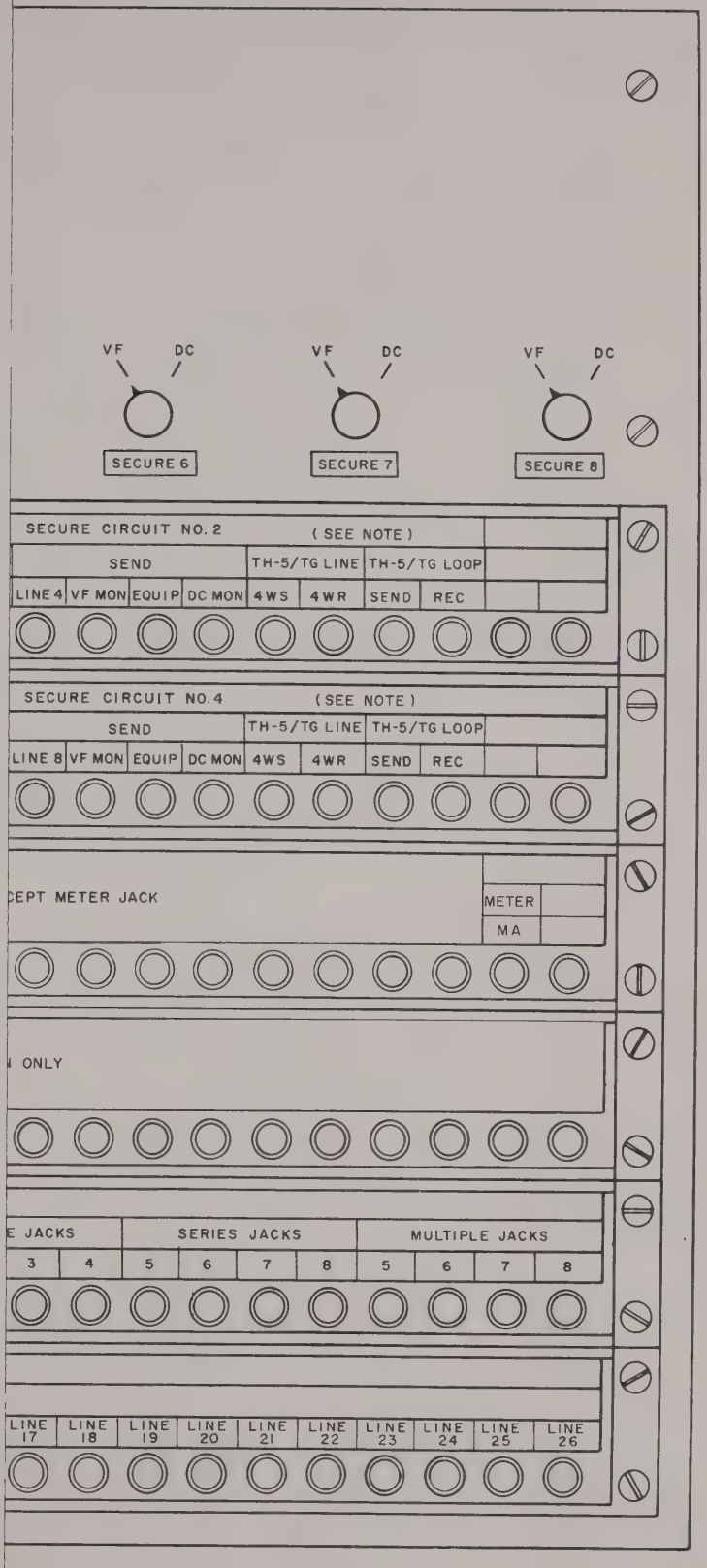
All components, except the COMSEC equipments, are installed, connected (wired), and ready for operation, upon receipt of the AN/MGC-22. Install the COMSEC equipments as required. Refer to the component technical manuals (app. A) for operating instructions. Switch settings and operation of items that are not covered by separate manuals are covered below.

a. SECURE Switches VF-DC (fig. 3-5). Eight switches (one for each channel), located on the BLACK PATCH PANEL, provide for dc or vf operation. The switches should be in the VF position. In the VF position, the line units and the TH-5/TG patch panels are placed in the signal circuits. In the DC position, the line units and the TH-5/TG patch panels are bypassed, thereby permitting dc operation. (TH-5 panels not used when equipped with TH-22/TG.)

CAUTION

Dc is not available in this configuration. Do not use the DC position unless direct current is made available.

b. Low Level Signaling Device TT-523/GGC (fig. 1-8). A TT-523/GGC has been placed on the TT-76(*)/GGC. The ON LINE-OFF LINE switch mounted on top of the TT-523/GGC must be placed in the ON LINE position when the TT-76(*)/GGC SELECTOR switch (fig. 1-12) is placed in position 1 (TD SEND, TR SEND, RECEIVE). The ON LINE-OFF LINE switch of the TT-523/GGC *must* be placed in the OFF LINE position when the TT-76(*)/GGC SELECTOR switch is in position 2 (TD SEND, LOCAL PUNCH) or 3 (LOCAL REPUNCH).



TM5815-307-15-C1-5

patch panel, front view.

Control or indicator	*Description or function*
LOOP:	
SEND	Provides for patching TH-5 / TG SEND jack to EQUIP jack.
REC	Provides for patching TH-5 / TG REC jack to EQUIP jack.

j. SET POS. Patch Panel.

Jack	*Description or function*
TD SIG	Permits connection of TT-23 (*) / FG to TD KYBD jack of RED PATCH PANEL.
KYBD	Permits connection of keyboard of TT-98(*) / FG to TD KYBD jack of RED PATCH PANEL.
PTR	Permits connection of page printer of TT-98(*) / FG to PTR jack of RED PATCH PANEL.

k. ZVA CONTROL BOX (fig. 3-7).

Control or indicator	*Description function*
Power switches	Two-position toggle switches. ON position applies ac power to monitor reperforator receptacles. OFF position removes ac power from monitor reperforator receptacles.
Power on indicators	When lighted, indicate power is applied to respective receptacle.

l. DEJECT-BYPASS Switch. In the OFF position, ac power is removed from the COMSEC equipments when the telephone plug is inserted into the PHONE jack. In the ON position, the SECURITY DEJECT RELAY circuit is bypassed and insertion of the telephone plug into the PHONE jack has no effect on the ac power supplied to the COMSEC equipments.

3-3. Operating Heaters and Air Conditioners

a. Heaters. Insert the power cord connector plug into the appropriate heater receptacle and operate the HEAT-OFF-FAN switch to the desired position. If the switch is set to HEAT, adjust the TEMPERATURE CONTROL to the desired temperature setting.

b. Air Conditioners. Refer to TM 5-4120-205-12 for air conditioner operating instructions.

3-4. Operating Procedures

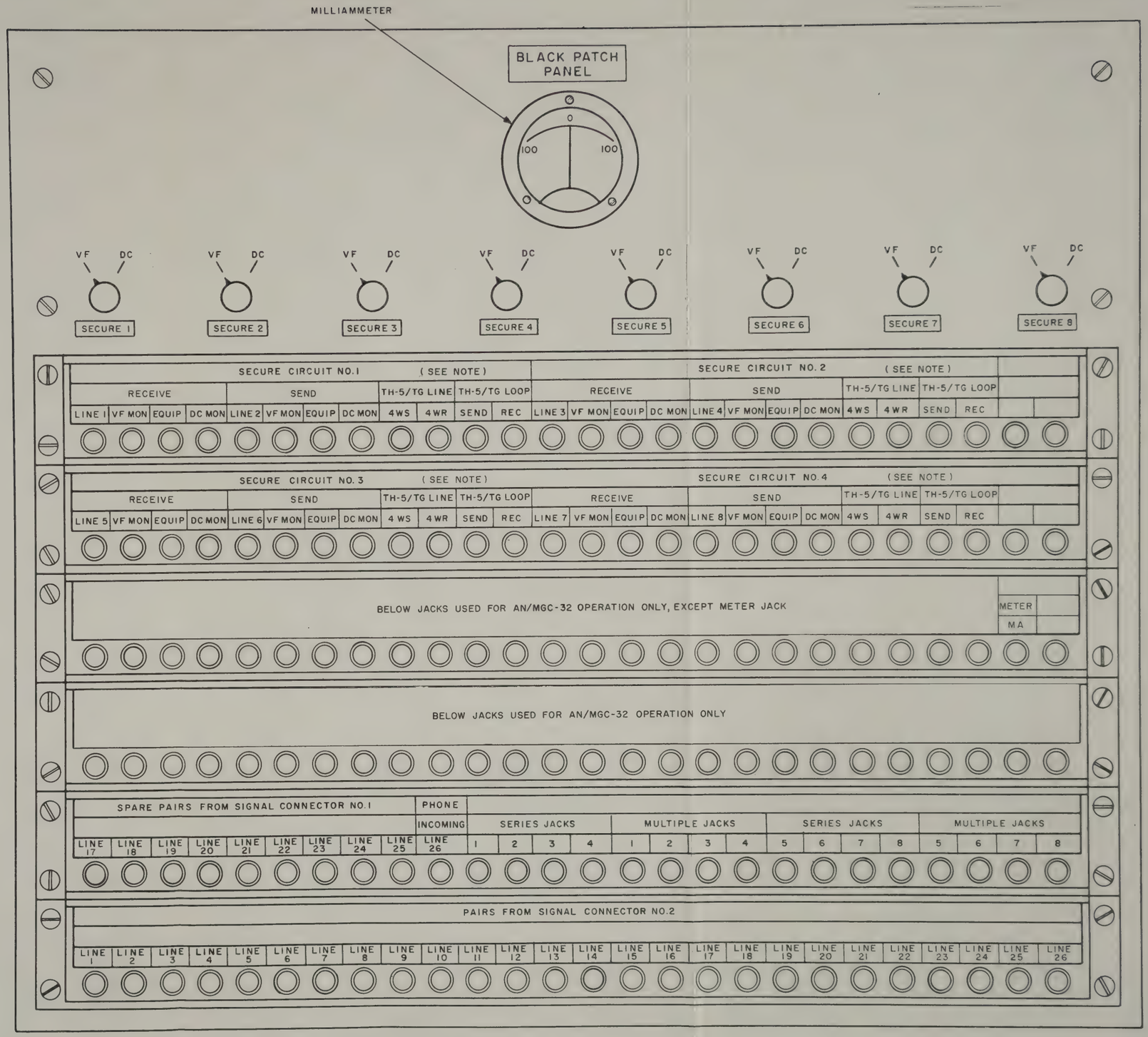
All components, except the COMSEC equipments, are installed, connected (wired), and ready for operation, upon receipt of the AN / MGC-22. Install the COMSEC equipments as required. Refer to the component technical manuals (app. A) for operating instructions. Switch settings and operation of items that are not covered by separate manuals are covered below.

a. SECURE Switches VF-DC (fig. 3-5). Eight switches (one for each channel), located on the BLACK PATCH PANEL, provide for dc or vf operation. The switches should be in the VF position. In the VF position, the line units and the TH-5 / TG patch panels are placed in the signal circuits. In the DC position, the line units and the TH-5 / TG patch panels are bypassed, thereby permitting dc operation. (TH-5 panels not used when equipped with TH-22 / TG.)

CAUTION

Dc is not available in this configuration. Do not use the DC position unless direct current is made available.

b. Low Level Signaling Device TT-523 / GGC (fig. 1-8). A TT-523 / GGC has been placed on the TT-76(*) / GGC. The ON LINE-OFF LINE switch mounted on top of the TT-523 / GGC must be placed in the ON LINE position when the TT-76(*) / GGC SELECTOR switch (fig. 1-12) is placed in position 1 (TD SEND, TR SEND, RECEIVE). The ON LINE-OFF LINE switch of the TT-523 / GGC *must* be placed in the OFF LINE position when the TT-76(*) / GGC SELECTOR switch is in position 2 (TD SEND, LOCAL PUNCH) or 3 (LOCAL REPUNCH).



NOTE:
TH-5/TG LINE AND TH-5/TG LOOP JACKS ARE DESIGNATED TH-22/TG LINE AND TH-22/TG LOOP WHEN FACILITY IS EQUIPPED WITH TERMINAL, TELEGRAPH TH-22/TG.

TM5815-307-15-C1-5

Figure 3-5. Black patch panel, front view.

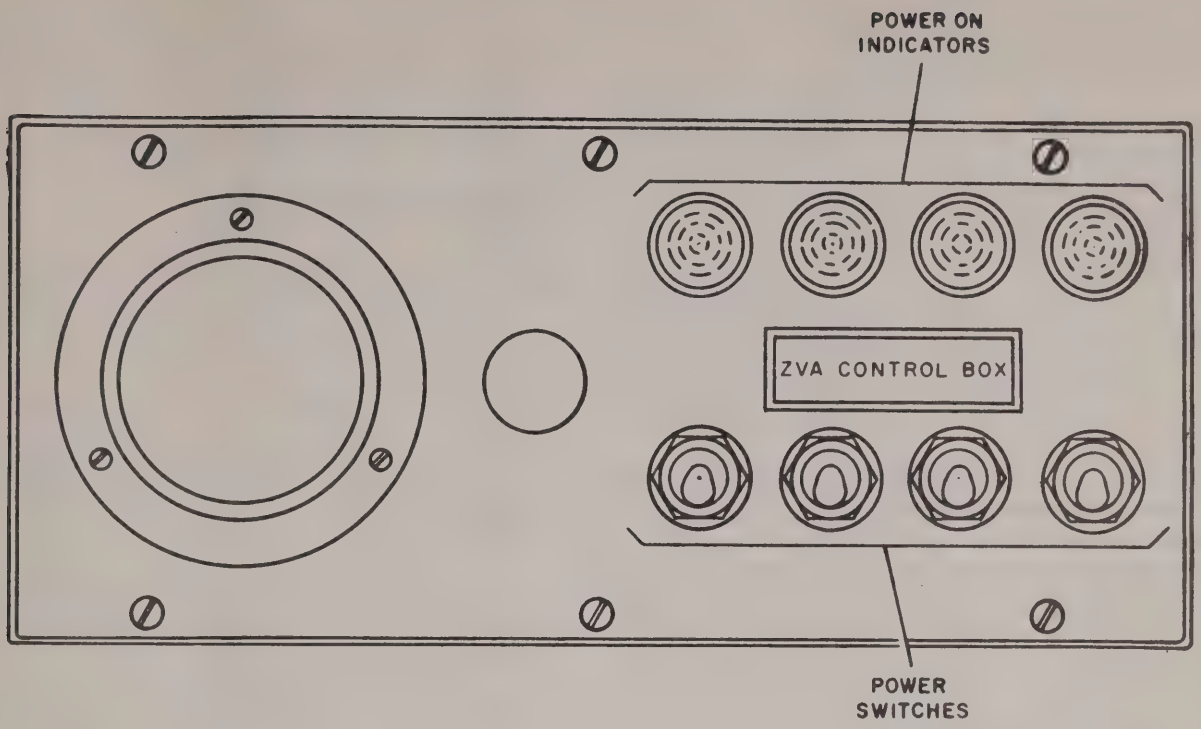


Figure 3-7. ZVA CONTROL BOX.

Caution: **The TT-523/GGC ON LINE-OFF LINE switch *must* be placed in the ON LINE position when the TT-76(*)/GGC SELECTOR switch is placed in position 1 (TD SEND, TRSEND, RECEIVE) to prevent damage to the TT-523/GGC.**

c. TH-5/TG Ac Power Switches. Place the TH-5/TG ac power switches (POS 1 through 4) in the ON position. The associated neon lamp should glow. (switches not used - TH-22/TG)

d. AN/MGC-22 ZVA CONTRO BOX switches. The ac circuits for the four monitor reperforators are wired through the ZVA CONTROL BOX mounted on the curbside wall of the van, behind TD numbers 1 and 2. The switches must be in the ON position to supply ac power to the monitor reperforators; the associated neon lamps should glow.

e. TH-22/TG Ac power switches. Place the front panel ON-OFF switches to ON(POS 1-4); POWER indicator lamp should light.

3-5. Checking Connections and Lineup

a. A SET POS. consisting of a lineup TD (TT-123(*)/FG) and a lineup monitor page printer (TT-98(*)/FG) is located near the RED PATCH PANEL. The SET POS. equipment can be plugged into any send line by patch cords between jack positions on the RED PATCH PANEL.

Note. A three-position patch panel is located beneath the lineup TD (TT-123(*)/FG). Plugs from the lineup TD and lineup monitor page printer (TT-98(*)/FG) must be plugged into the appropriate jacks of this three-position patch panel.

b. The keyboard or the lineup TD may be used to communicate with the distant station regarding circuit arrangements, circuit lineup, and circuit testing. Use patch cords on the RED PATCH PANEL between the SET TTY patch panel TD SIG, KYBD, and PTR jacks and the appropriate SECURE CIRCUIT No. 1, 2, 3, etc: SEND CIPH 1, 2, 3, etc; TD STEP CIPH 1, 2, 3, etc; and the RECEIVE CIPH 1, 2, 3, etc, jacks.

c. Use a test message tape to transmit a test message from the SET POS. lineup TD. Check to be sure that correct copy is recorded by the lineup monitor page printer.

d. Remove the patch cords from the SET TTY and associated jack positions on the RED PATCH PANEL after use.

3-6. Operation Under Adverse Climatic Conditions

The AN / MGC-22 can be operated in extremely cold or hot climates. The van offers complete protection from the elements for personnel and equipment; however, the precautions given in *a*, *b*, and *c* below should be observed.

a. Operation in Cold Climates.

(1) Extreme cold causes the 26-pair cables and field wires to become hard, brittle, and difficult to handle. Be careful when handling the cables and when connecting them to the van so that kinks and unnecessary loops will not result in permanent damage.

(2) Make sure the binding posts and cable receptacles on the outside of the van are free of frost, snow, and ice by replacing the covers on the entrance boxes when they are not in use.

(3) Replace the 26-pair cable connector cover as soon as the connector is disconnected from the van; never drag or place an open connector in the snow.

b. Operation in Hot Climates.

(1) In hot, dry climates, the connectors, receptacles, and binding posts are subject to damage from dirt and dust. Close the covers on the entrance boxes when they are not in use and replace the covers on the cable connectors. Never drag or place an open connector on the ground.

(2) Be careful that the air-conditioner intake and exhaust vents on the exterior of the van do not become clogged with sand or dust. Remove the air intake filters periodically to be sure they are still serviceable.

c. Operation in Warm, Damp Climates.

(1) In warm, damp climates, the equipment is subject to damage from moisture and fungi. Wipe all moisture and fungi from the exterior of the equipment with a clean cloth.

(2) The 26-pair receptacle and connector contacts are susceptible to corrosion that will cause a high resistance contact area. Wipe all 26-pair cable connectors and receptacles with a clean, dry cloth before connecting them together.

3-7. Stopping Procedures

NOTE

To turn the power off in an emergency, place the MAIN circuit breaker at each power distribution panel in the OFF position.

a. Communications Equipment Components. Refer to the applicable technical manuals (app. B) for stopping procedures for the communications equipment components of the AN / MGC-22.

b. Van Components.

(1) *Heaters.* Operate the TEMPERATURE CONTROL to its lowest setting and the HEAT-OFF-FAN switch to OFF.

(2) *TH-5 / TG ac power supply.* Place all TH-5 / TG as power switches on the TH-5 / TG switch panel to OFF. (See note below.)

(3) *Air conditioner.* Place the OFF-VENTILATING-COOLING switch to OFF.

CAUTION

Operate the OFF-VENTILATING-COOLING switch to OFF *before* operating circuit breaker No. 1 in power distribution panels No. 2 and 3 to OFF.

c. Circuit Breaker and Light Switches. Place all circuit breaker and light switches in the OFF position.

NOTE

When facility is equipped with Terminal, Telegraph TH-22 / TG, operate the front panel ON-OFF switches to OFF.

CHAPTER 4

MAINTENANCE INSTRUCTIONS

Section I. OPERATOR'S MAINTENANCE

4–1. Scope of Operator's Maintenance

The maintenance duties assigned to the operator of the AN/MGC–22 are listed below together with a reference to the paragraph covering the specific maintenance function. The duties assigned do not require tools or test equipment other than those issued with the assemblage.

a. Daily preventive maintenance checks and services (para 4–4).

b. Cleaning and touchup painting (para 4–5).

c. Troubleshooting (para 4–6) and authorized replacements (para 4–7).

4–2. General Preventive Maintenance

Preventive maintenance is the systematic care, servicing, and inspection of equipment to prevent the occurrence of trouble, to reduce downtime, and to assure that the equipment is serviceable.

a. Systematic Care. The procedures given in paragraphs 4–4 and 4–5 cover routine systematic care and cleaning essential to proper upkeep and operation of this equipment.

b. Preventive Maintenance Checks and Services. The preventive maintenance checks and services chart (para 4–4) outlines functions to be performed each day. These checks and services are to maintain Army electronic equipment in a combat-serviceable condition; that is, in good general (physical) condition and in good operating condition. To assist operators in maintaining combat-serviceability, the chart indicates what to check, how to check, and the normal conditions; the *References* column lists the illustrations, paragraphs, or manuals that contain detailed repair or replacement procedures. If the defect cannot be remedied by the operator, higher category of maintenance or repair is required. Records and reports of these checks and services must be made in accordance with the requirements set forth in TM 38–750.

4–3. Operator's Preventive Maintenance Checks and Services Periods

Operator's preventive maintenance checks and services are required on a daily basis or under the special conditions listed below.

a. When the AN/MGC–22 is first installed.

b. Before preparing the AN/MGC–22 for shipment.

c. At least once each week if the AN/MGC–22 is not in daily use.

4–4. Daily Preventive Maintenance Checks and Services Chart

Note. If the AN/MGC–22 is in continuous use, perform only those items which do not interfere with the operation of the equipment.

Sequence No.	*Item to be inspected*	*Procedure*	*References*
		EXTERIOR	
1	Shelter skin	Make sure that there are no skin punctures, tears, or open seams that would permit moisture to enter the shelter wall.	TB SIG 354.
2	Grounding system	*a.* Make sure that grounding system is properly installed.	*a.* Para 2–2.
		b. Tighten loose ground connections.	*b.* None.
3	Signal and power entrance box and signal binding posts box.	*a.* Remove dirt, grease, and moisture from around binding posts and receptacles.	*a.* Para 4–5.
		b. Put dust covers and receptacle covers on all unused receptacles.	*b.* Fig. 2–3.

Sequence No.	Item to be inspected	Procedure	References
4	Power and signal cable assemblies.	*a.* Remove grease, oil, and dirt from cable insulation and connectors.	*a.* Para 4–5.
		b. Tighten all locking rings that secure cables to the receptacles.	*b.* None.
		c. Put connector covers and dust caps on unused cables.	*c.* None.
		d. Adjust cable grips to relieve strain of cable weight.	*d.* None.
		INTERIOR	
5	Signal and power cable, wire, and patch cord.	*a.* Tighten loose connections of all plugs and connectors to their receptacles and jacks.	*a.* None.
		b. Make sure that insulation is not cut. Remove all kinks and strain.	*b.* None.
6	Walls, ceiling, and floor	Check for holes, open seams, or signs of leakage or water seepage.	TB SIG 354.
7	Wastebaskets	Empty and clean wastebaskets.	Para 4–5.
8	Cabinet drawers	Remove refuse and articles not assigned to cabinet drawers.	None.
9	Batteries and hand lantern	Replace batteries or bulb if hand lantern fails to light.	None.
10	J–1077A/U	*a.* Remove dirt, grease, and moisture from receptacles and binding posts.	*a.* Para 4–5.
		b. Put dust covers and receptacle covers on all unused receptacles.	*b.* None.
11	Clock	Wind and set to correct time.	None.
12	Lighting (van)	Check van lighting and replace defective fluorescents and starters, and emergency dome lamps.	None.
13	Power distribution panels No. 1, 2, and 3.	Check LINE VOLTAGE, LINE CURRENT, and LINE FREQUENCY meters for proper indications. Check all circuit breaker switches for proper operation. Check all circuit breaker indicator lamps and replace defective lamps.	Fig. 3–1, 3–2, 3–3.
14	Communication equipments	Perform the required daily preventive maintenance checks and services as outlined in associated technical publications.	App A.
15	Patching panels	Check for proper patch cord connections and seating of patch cord plugs into patch panel jacks.	Fig. 3–5 and 3–6.
16	Equipment operation	Check to see that all equipment performs satisfactorily.	Chap 3 and app A.
		Report operational failures of any equipments or circuits.	
		Replace defective items for which authorized spare part are provided.	

4–5. Cleaning and Touchup Painting

Warning: **Cleaning compound is flammable and its fumes are toxic. Do not use near a flame; provide adequate ventilation.**

a. Cleaning. Use a dry, clean lint-free cloth or brush to remove dust and dirt. If necessary, moisten the cloth or brush with Cleaning Compound (Federal stock No. 7930–395–9542) to remove grease, oil, and ground-in dirt and dust. After cleaning, wipe dry with a cloth.

Caution: **Paint per MIL–E–46061 (MO) has been used on the exterior of some shelters to lower the inside temperature when the shelter is located in the direct rays of the sun. Before doing any touchup painting on the shelter ex-**

terior, check for a caution notice inside the shelter door. Do not use any other type of paint for touchup if the shelter has been painted with paint per MIL–E–40661 (MO).

b. Touchup Painting. Remove rust and corrosion from metal surfaces by lightly sanding them with fine sandpaper. Brush two thin coats of the proper paint on the bare metal to protect it from further corrosion. Refer to the applicable cleaning and refinishing practices specified in TB SIGN 364.

4–6. Operator's Troubleshooting

a. General. The symptoms in the troubleshooting chart (*b* below) are based on the operational checks in the daily preventive maintenance checks and services chart (para 4–4). To troubleshoot the AN/MGC–22, perform all functions in the daily preventive maintenance checks and services chart and proceed until an abnormal condition is observed. When an abnormal condition is observed, locate the symptom in the troubleshooting chart below. Perform the checks and corrective measures indicated in the troubleshooting chart. If the corrective measures do not result in correction of the trouble, a higher category of maintenance is required.

b. Operator's Troubleshooting Chart.

Item No.	*Trouble symptom*	*Probable trouble*	*Checks and corrective measures*
1	Neon light on power distribution panels No. 1, 2, and 3 fails to glow when associated MAIN circuit breaker is operated to ON.	*a.* Defective lamp.	*a.* Replace neon lamp (para 4–7).
		b. Poorly seated power cable connector.	*b.* Check seating of power cable connector in signal and power entrance box (fig. 2–3 and para 2–3).
		c. Defective socket or switch.	*c.* Request higher category maintenance.
		d. No 115 volt ac input.	*d.* Check power source (para 2–3).
2	*a.* LINE VOLTAGE meter indicates no voltage.	*a.* Defective power distribution panel.	*a.* Request higher category maintenance.
	b. LINE VOLTAGE meter indication is abnormally high or low.	*b.* Defective power source.	*b.* Check power source (para 2–3).
3	LIGHTS glowlamp fails to light.	*a.* Defective neon lamp.	*a.* Replace neon lamp.
		b. Defective power distribution panel.	*b.* Request higher category maintenance.
4	Fluorescent lamps fails to light.	*a.* Defective lamps.	*a.* Replace fluorescent lamps.
		b. Defective starters.	*b.* Replace starters.
5	LINE CURRENT		
	a. Meter indicates 0.	*a.* Defective power distribution panel.	*a.* Request higher category maintenance.
	b. LINE CURRENT meter indication is abnormally high.	*b.* One or more circuit breakers beside the MAIN and LIGHTS circuit breakers at ON.	*b.* Operate all circuit breakers, except the MAIN and LIGHTS circuit breakers, to OFF and check LINE CURRENT meter. If the indication is still abnormally high, operate the MAIN and LIGHTS circuit breakers to OFF and request higher category maintenance.
6	Fluorescent lamps are not extinguished when door is opened.	BLACKOUT BYPASS switch in BLACKOUT position.	*a.* Operate BLACKOUT BYPASS switch to BYPASS.
			b. Request higher category maintenance.
7	Fluorescent lamps fail to light.	Defective BLACKOUT-BYPASS switch or circuit breaker.	Request higher category maintenance.
8	FAN glowlamp fails to light and/or fan fails to operate.	*a.* Defective neon lamp.	*a.* Replace neon lamp.
		b. Defective power distribution panel.	*b.* Request higher category maintenance.
		c. Defective blower.	*c.* Request higher category maintenance.
9	HEATER glowlamp fails to light.	*a.* Defective neon lamp.	*a.* Replace neon lamp.
		b. Defective power distribution panel.	*b.* Request higher category maintenance.

Item No.	Trouble symptom	Probable trouble	Checks and corrective measures
10	*a.* No air is expelled from front of heater.	*a.* Defective heater.	*a.* Replace heater and request higher category maintenance for defective heater.
	b. Air is not heated	*b.* Defective heater.	*b.* Replace heater and request higher category maintenance for defective heater.
	c. Heater continues to heat after desired temperature has been reached.	*c.* Defective heater.	*c.* Replace heater and request higher category maintenance for defective heater.
11	Indicator lamps fail to light when associated circuit breaker switches are operated to ON.	*a.* Defective neon lamp. *b.* Defective power distribution panel.	*a.* Replace neon lamp. *b.* Request higher category maintenance.
12	TA–312/PT fails to operate properly.	*a.* Weak or defective batteries. *b.* Defective TA–312/PT.	*a.* Replace batteries. *b.* Replace TA–312/PT and refer to higher maintenance category for repair.
13	Following communication equipments failures: TT–123(*)/FG AN/GGC–9 TT–346(*)/FG TT–178(*)/FG TT–98(*)/FG TT–119(*)/FG TH–5/TG or TH–22/TG	*a.* Defective communication equipment.	*a.* Check the following: (1) Blown fuses. (2) Equipment controls. (3) Tripped circuit breakers. (4) Patch cord terminations. (5) Power and signal cord terminations. (6) Refer to equipment manuals (app A) for additional tests.
		b. Defective power distribution panel.	*b.* Request higher category maintenance for repairs.

4–7. Operator's Removal and Replacement Procedures

a. Van Facility Replacement Parts. The only van facility parts authorized for replacement by the operator are the fluorescent lamps, lamp starters, power distribution panel glowlamps, hand lantern, and extension light incandescent lamps. The procedures for removal and replacement of all the above items are evident upon inspection.

b. Communication Equipment Replacement Parts. Refer to the applicable technical manual (app A) for the removal and replacement of the operator's replacement parts of the communication equipments. To remove the communication equipments mounted in the van facility equipment racks, reverse the applicable installation procedures.

Section II. ORGANIZATIONAL MAINTENANCE

4–8. Scope of Organizational Maintenance

Organizational maintenance consists of specific authorized preventive and corrective maintenance procedures (*a* and *b* below).

a. Organizational Preventive Maintenance. Organizational preventive maintenance is performed monthly and quarterly; the specific procedures are described in paragraphs 4–9 and 4–10.

b. Corrective Maintenance. Authorized organizational corrective maintenance procedures include organizational troubleshooting (para 4–11 and 4–12) and organizational repair procedures (para 4–13 through 4–18). If performance of the authorized corrective maintenance procedures does not correct a defective AN/MGC–22, higher category maintenance is required.

c. Maintenance Records and Reports. Records and reports of preventive and corrective maintenance must be made in accordance with procedures given in TM 38–750.

d. Tools and Test Equipment. The tools and test equipment not issued as part of the AN/MGC–22 but required for its organizational maintenance are listed in appendix C. Additional tools furnished as part of the AN/MGC–22 and required for organizational maintenance are listed in appendix B.

e. Touchup Painting. Remove rust and corrosion from metal surfaces by lightly sanding the surfaces with fine sandpaper. Brush two thin coats of the proper paint on the bare metal. Refer to the applicable cleaning and refinishing practices instructions given in TB SIG 364.

Caution: **Paint per MIL–E–46061 (MO) has been used on the exterior of some shelters to lower the inside temperature when the shelter is located in the direct rays of the sun. Before doing any touchup painting on the shelter exterior, check for a caution notice inside the shelter door. Do not use any other type of paint for touchup if the shelter has been painted with paint per MIL–E–46061 (MO).**

4–9. Monthly Preventive Maintenance Checks and Services Chart

Perform the maintenance functions indicated in the monthly preventive maintenance checks and services chart once each month. A month is defined as approximately 30 calendar days of 8-hour-per-day operation. If the equipment is operated 24 hours per day, the monthly preventive maintenance checks and services should be performed at 10-day intervals. Adjustment must be made for any unusual operating conditions. Equipment maintained in a standby (ready for immediate operation) condition must have monthly preventive maintenance checks and services performed on it. Equipment in limited storage (requires service before operation) does not require monthly preventive maintenance.

Sequence No.	*Item to be inspected*	*Procedure*	*References*
		EXTERIOR	
1	Shelter skin and hardware	Use touchup painting where paint is blistered, pitted, or flaking, and on bare metal spots (such as steps, power and signal entrance box covers, skids, etc).	Para 4–8*c*.
2	Grounding system	Clean ground lug connections.	Para 2–2.
3	Movable parts and door	*a*. Clean and paint bare metal parts. *b*. Tighten loose screws and bolts. *c*. Lubricate. *d*. Clean air vent filter. *e*. Apply gasket cement on loose gaskets.	*a*. Para 4–8*c*. *b*. None. *c*. TB SIG 354. *d*. None. *e*. None.
4	Signal and power entrance box and signal binding posts box.	*a*. Remove corrosion from binding posts. *b*. Repair insulation cuts and abrasions with electrical insulation tape. *c*. Inspect layout of cables and relocate if necessary to prevent damage by or hazard to vehicles and personnel.	*a*. Fig. 2–3. *b*. None. *c*. None.
		INTERIOR	
5	Signal and power cables, wires, cords, and patch cords.	*a*. Tighten screws and clamps that secure wires to terminal. *b*. Repair insulation cuts and abrasions with electrical insulation tape. *c*. Cover disconnected bare wire with electrical insulation tape. *d*. Polish metal plugs on patch cords, telephone cords, etc.	*a*. None. *b*. None. *c*. None. *d*. None.
6	Signal, power, and lighting system ducts.	Tighten loose screws, bolts, and clips. Repair or replace defective switches, switchplate outlets, receptacles, and jacks.	None.
7	Lighting system	*a*. Tighten screws and nuts that secure lighting fixtures, lights, and parts on power distribution panel. *b*. Replace defective or missing parts in lighting system and power distribution panels.	*a*. None. *b*. Para 4–16.
8	Walls, ceiling, and floor	*a*. Clean and paint bare metal spots. *b*. Check for skin punctures and cracked seams.	*a*. Para 4–8*c*. *b*. TB SIG 354.
9	Cabinets and storage drawers.	Repair or replace broken doors and latches.	None.

Sequence No.	Item to be inspected	Procedure	References
10	Equipment mountings	*a.* Tighten all loose bolts, nuts, screws, and clamps that secure equipment, racks, frames, shelves, braces, clamps, and mounting hardware. Replace missing bolts, nuts, etc.	*a.* None.
		b. Make sure that equipment mounting racks, frames, braces, shelves, and clamps are not bent, broken, or out of shape to endanger personnel or equipment.	*b.* None.
11	Power distribution panel	Repair or replace defective parts.	Para 4–16.
12	Batteries and hand lantern	Remove dirt and corrosion from battery compartment, and replace batteries that show signs of swelling, leakage, or corrosion.	None.
13	Exhaust blowers	*a.* Lubricate motor with Lubricating Oil, General Purpose (PL-Special) or Lubricating Oil, Internal Combustion Engine (OE–10).	*a.* None.
		b. Clean motor and fanhousing.	*b.* None.
		c. Repair or replace defective parts.	*c.* Para 4–15.
14	Blackout curtain	*a.* Tighten screws that secure track fixture to ceiling.	*a.* None.
		b. Repair or replace if torn, ripped, or frayed.	*b.* None.
15	Electric heater	*a.* Clean inside and outside of case.	*a.* None.
		b. Repair or replace defective parts.	*b.* Para 4–14.
16	J–1077A/U	*a.* Remove corrosion from binding posts.	*a.* None.
		b. Repair insulation cuts and abrasions with electrical insulation tape.	*b.* None.
17	Clock	Replace if correct time cannot be maintained.	None.
18	Equipment performance	*a.* Check operation of all equipment.	*a.* Para 4–4 and note below.
		b. Replace and/or repair any defective or inoperable part.	*b.* None.

Note. In addition to the preventive maintenance checks and services for the items listed in the chart above, perform the preventive maintenance required for the components of the AN/MGC–22 which are covered in separate technical manuals (app A).

4–10. Quarterly Preventive Maintenance Checks and Services Chart

Quarterly maintenance checks and services on the AN/MGC–22 are required. A quarterly interval is defined as approximately 90 days of 8 hour-per-day operation. Adjustment of the quarterly preventive maintenance interval must be made to compensate for any unusual operating conditions. For example, if the AN/MGC–22 is used 16 hours per day, the quarterly preventive maintenance checks and services should be performed at 45-day intervals. The monthly maintenance checks and services (para 4–9) constitute a part of the quarterly preventive maintenance and must be performed concurrently. All deficiencies or shortcomings will be recorded in accordance with the requirements of TM 38–750. Perform all checks and services listed in the quarterly preventive maintenance checks and services chart in the sequence listed.

Sequence No.	Item to be inspected	Procedure	References
		GENERAL	
1	End item equipment	*a.* Check equipment for completeness, and requisition missing components, running spares, and defective parts.	*a.* App B.
		b. Make sure that all components are mounted or stowed in assigned places.	*b.* Fig. 6–1.

Sequence No.	Item to be inspected	Procedure	References
2	Modification work orders (MWO's).	Make sure that all applicable MWO's have been applied and MWO number is stamped as required. All URGENT MWO's must be applied immediately; all NORMAL MWO's must be scheduled.	DA Pam 310–7.
		EXTERIOR	
3	Shelter skin and hardware	Check for skin punctures, tears, or open seams that would permit moisture to enter shelter wall. Repair or replace defective hardware.	TB SIG 354.
4	Grounding system	Replace ground rod if ground lead lug cannot be securely tightened. Replace ground lead if it is cut, corroded, or broken.	Para 2–2.
5	Entrance door	Make sure that rubber gaskets provide watertight seal. See that hinges and door handles are not broken.	None.
6	Signal and power entrance box and signal binding posts box.	*a.* Use a brush and carefully remove sand, moisture, and dirt from contacts of all cable receptacles.	*a.* None.
		b. Tighten locknuts, screws, and bolts that secure cable receptacles and binding post, and replace defective parts.	*b.* None.
7	Power and signal cable assemblies.	Replace assemblies with defective wiring, insulation, or connectors.	None.
		INTERIOR	
8	Signal and power cables, cords, wires, and patch cords.	Dress all cabling, wires, and cords neatly; use cable and cord clamps provided in the shelter or use electrical insulation tape and twine.	None.
9	Walls, ceiling and floor	Paint blistered, pitted, or flaked area and bare metal spots.	Para 4–8.
10	Fire extinguisher	*a.* Recharge if weight of contents is less than required or if seal is broken.	*a.* None.
		b. Replace if valve assembly is damaged.	*b.* None.
11	First aid kit	Replace if case is broken or damaged. Check for completeness. (See parts lists inside cover.)	None.
12	J–1077A/U	*a.* Use a brush and carefully remove sand, moisture, and dirt from contacts of cable receptacles.	*a.* None.
		b. Tighten locknuts, screws, and bolts that secure receptacles and bolting posts, and replace defective parts.	*b.* None.
13	Chair and chair cushion	*a.* Repair or replace chair if parts are bent or broken, or if it is unsafe for use.	*a.* None.
		b. Repair or replace cushion that is torn, cut, or has split seams or exposed padding.	*b.* None.
14	Ax and sledge hammer	Replace if handle is broken, split, or does not fit head tightly.	None.
15	Ladder	*a.* Paint blistered, pitted, or flaking, areas, and bare spots.	*a.* Para 4–8*c*.
		b. Repair or replace if steps, frame, or parts are bent, or broken, or if it is unsafe for use.	*b.* None.

4–11. Organizational Troubleshooting, General

The systematic troubleshooting procedure begins with a visual inspection performed at the operator's maintenance category and is completed by localizing and isolating techniques. Localization (*a* below) means tracing the trouble to a defective circuit or component. If the trouble has been localized to a major component, follow the troubleshooting instructions given in the appropriate technical manual (app A). If the trouble has been localized to a defective AN/MGC–22 circuit or component, use the isolation techniques (*b* below) to locate the defective part.

a. Localization. In general, each circuit or component in the AN/MGC–22 is separated from all others electrically and functionally. A trouble in any of the circuits or components can usually be localized by the use of the methods given below.

(1) *Visual inspection.* The purpose of visual inspection is to locate troubles without the use of tests or measurements. Look for burned, charred, or otherwise damaged parts or wiring to localize trouble to a particular circuit or component.

(2) *Operational tests.* Operational tests frequently indicate an abnormally operating circuit. In many instances, the tests will be helpful in determining the exact nature of the trouble. Use the operational tests in the daily preventive maintenance checks and services chart (para 4–4) and perform each step in sequence. When an abnormal indication has been observed, refer to the troubleshooting chart (para 4–12) to localize the defective circuit or component.

b. Isolation of Defective Part. When a trouble has been localized to a defective circuit or component, use the following techniques to isolate the defective part.

(1) *Continuity and voltage checks.* Make voltage and continuity checks at outlets, receptacles, connector pins, and other points related to the circuit or component. Refer to the AN/MGC–22 power schematic-wiring diagram (fig. 6–2) to trace circuits.

(2) *Signal tracing.* Trace signals and make voltage checks if the trouble has been localized to a defective signal circuit. Use the AN/MGC–22 signal schematic-wiring diagram (fig. 6–3) to trace circuits.

4–12. Organizational Troubleshooting Chart

Item No.	*Trouble symptom*	*Probable trouble*	*Checks and corrective measures*
1	Indicator lamps on distribution panels fail to light.	*a.* Defective MAIN circuit breaker switches.	*a.* Check switches and replace if necessary.
		b. Defective socket.	*b.* Check socket and replace if necessary.
2	LINE VOLTAGE meter indication is 0.	*a.* Defective meter.	*a.* Check meter and replace if necessary (para 4–16).
		b. Defective MAIN circuit breaker.	*b.* Check MAIN circuit breaker and replace if necessary (para 4–16).
3	LIGHTS glowlamp fails to light.	*a.* Defective socket.	*a.* Check socket and replace if necessary.
		b. Defective circuit breaker.	*b.* Check circuit breaker and replace if necessary (para 4–16).
4	Fluorescent lamps fail to light.	*a.* Defective ODDS-EVEN switches.	*a.* Check switches and replace if necessary.
		b. Defective light fixture.	*b.* Check light fixtures and repair or replace if necessary (para 4–18).
5	*a.* LINE CURRENT meter indicates 0.	*a.* Defective meter.	*a.* Check meter and transformer and replace if necessary (para 4–16).
	b. LINE CURRENT meter indication is abnormally high.	*b.* Defective wiring.	*b.* Check wiring and repair if necessary (fig. 6–2).
6	Fluorescent lights are not extinguished when door is opened.	Defective door microswitch.	Check door microswitch and replace if necessary.
7	Fluorescent lights fail to light.	Defective BLACKOUT-BYPASS switch.	Check switch and replace if necessary.
8	FAN glowlamp fails to light and/or exhaust blower fails to operate.	*a.* Defective socket.	*a.* Check socket and replace if necessary.
		b. Defective circuit breaker.	*b.* Check circuit breaker and replace if necessary (para 4–16).

Item No.	Trouble symptom	Probable trouble	Checks and corrective measures
		c. Defective blower.	c. Check blower and repair if necessary (para 4–15).
		d. Defective wiring at power duct.	d. Check wiring and repair if necessary.
9	Heaters glowlamp fails to light.	a. Defective socket.	a. Check socket and replace if necessary.
		b. Defective circuit breaker.	b. Check circuit breaker and replace if necessary (para 4–16).
10	a. No air is expelled from heater.	a. The following may be defective: (1) HEATER outlet.	a. Check the following: (1) HEATER outlet and replace if necessary.
		(2) Heater controls.	(2) Control switches and replace if necessary (para 4–14).
		(3) Heater (internal) circuit breaker.	(3) Internal circuit breaker and replace if necessary (para 4–14).
		(4) Motor.	(4) Motor and replace if necessary (para 4–14).
	b. Air is not heated -------	b. The following may be defective: (1) Heater controls.	b. Check the following: (1) Control switches and replace if necessary (para 4–14).
		(2) Temperature control thermostat.	(2) Temperature control thermostat and replace if necessary (para 4–14).
		(3) Heating element.	(3) Heating element and replace if necessary (para 4–14).
11	Communications equipment failures: TT–123(*)/FG AN/GGC–9 TT–346(*)/FG TT–178(*)/FG TT–98(*)/FG TT–119(*)/FG TH–5/TG or TH–22/TG TA–312/PT	Defective communication equipment.	a. Refer to associated equipment manuals (app A) for authorized tests and repairs. b. Request higher maintenance category for repair.
12	Low-level signaling device failures.	a. Defective TT–524/FGC. b. Defective TT–523/FGC.	a. App A. b. App A.

4–13. General Organizational Repair Procedures

a. Communication Equipment. Refer to the applicable technical manual (app A) for organizational repair of the communications equipment.

b. Van Facility.

(1) When a defective part has been isolated within a component or circuit of the AN/MGC–22, perform the appropriate repair procedure (para 4–14 through 4–18).

(2) Refer to TB SIGN 354 for repair of the basic shelter.

4–14. Electric Space Heater Repairs

a. Remove the heater from its mounting base and remove the cover plates to provide access to the interior of the heater (fig. 4–1).

b. Refer to the heater instruction plates for circuit details and identification of heater parts. Replace defective parts as authorized; the parts replacement procedures are readily apparent upon inspection. Figure 4–2 is the schematic-wiring diagram of the heater.

4–15. Exhaust Blower Repairs

Organizational repair of the blowers is limited to replacement of the ac power cord and the motor.

a. Operate the FAN circuit breaker to OFF.

b. Replace a defective ac power cord or motor as necessary; the replacement procedures are readily apparent upon inspection.

4–16. Power Distribution Panel Repairs

***Warning:* Before performing any power distribution panel repairs, disconnect the ac power cable from the POWER receptacle in the signal and power entrance box.**

a. Preliminary Procedures. Remove the screws that secure the cover to the power distribution panel, and remove the cover before performing the procedures given in *b*, *c*, and *d* below.

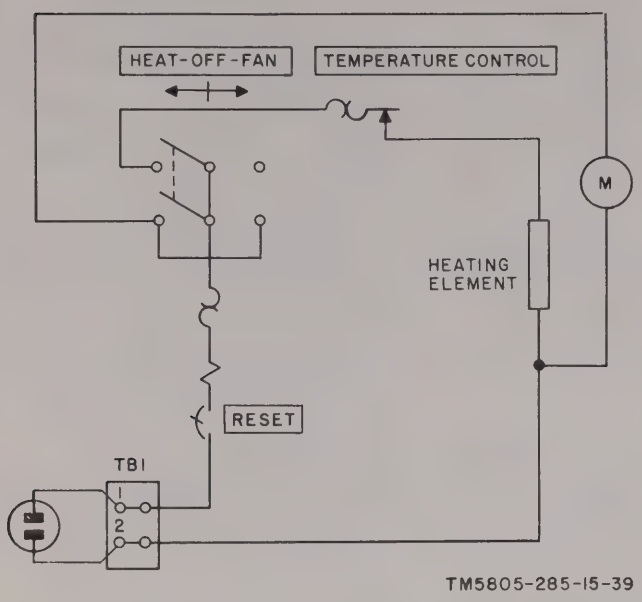


Figure 4-2. Heater, schematic diagram.

b. Removal and Replacement of Circuit Breakers (figs. 3-1 through 3-3).

(1) Grasp the defective circuit breaker and pull it straight out from the panel.

(2) Disconnect the wires that are connected to the circuit breaker.

(3) Connect the wires to the appropriate terminals of the replacement circuit breaker.

(4) Position the circuit breaker in the power distribution panel and firmly press it into place.

c. Removal and Replacement of Current Transformer.

(1) If the meters are mounted on a separate meter panel, remove the screws that secure the meter panel to the power distribution panel.

(2) Disconnect the black and white leads from the transformer terminals (noting which lead was connected to each terminal).

(3) Remove the nuts and washers that se-

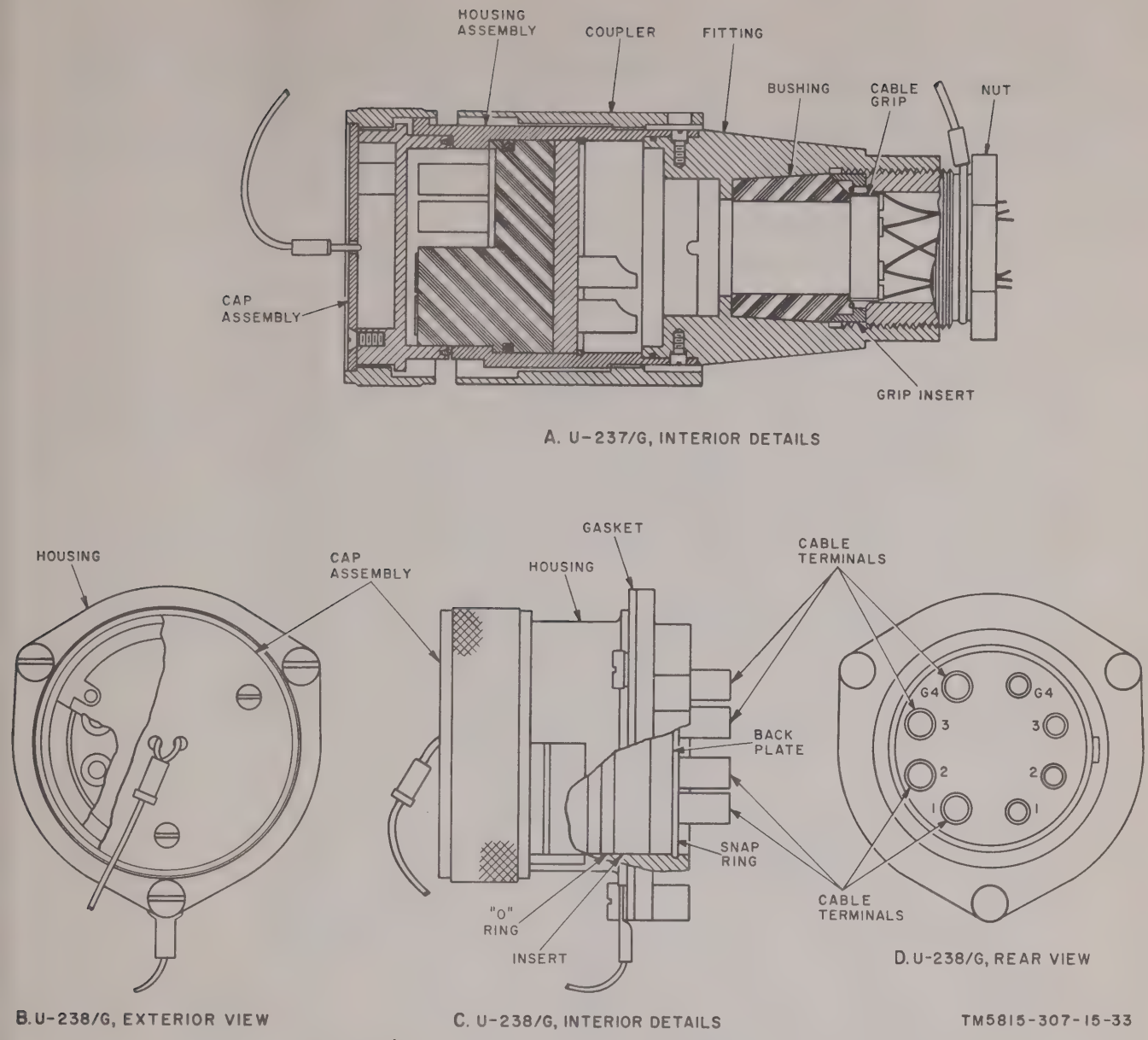


Figure 4–3. Power cable connector and power receptacle, assembly details.

cure the current transformer inside the panel, and remove the current transformer.

Note. Count the number of turns of heavy black wire through the center hole of the current transformer before proceeding to the next step.

(4) Disconnect the black wire that is wound around the current transformer from the MAIN circuit breaker and carefully unwind the wire.

Caution: **Be sure that the number of turns of the black wire around the replacement current transformer is the same as that on the original transformer.**

(5) Wind the black wire around the replacement current transformer.

(6) Reconnect the black wire to the MAIN circuit breaker.

(7) Position the current transformer inside the panel and secure it with the original nuts and washers.

(8) Connect the black and white ammeter leads to the appropriate terminals of the transformer.

(9) Replace the meter panel and tighten the screws.

d. Removal and Replacement of Meters.

(1) Disconnect the leads from the meter terminals (noting the color of the leads connected to each meter terminal).

(2) Remove the bolts that secure the meter to the panel, and lift out the meter.

(3) Position the replacement meter in the panel and secure it with the bolts.

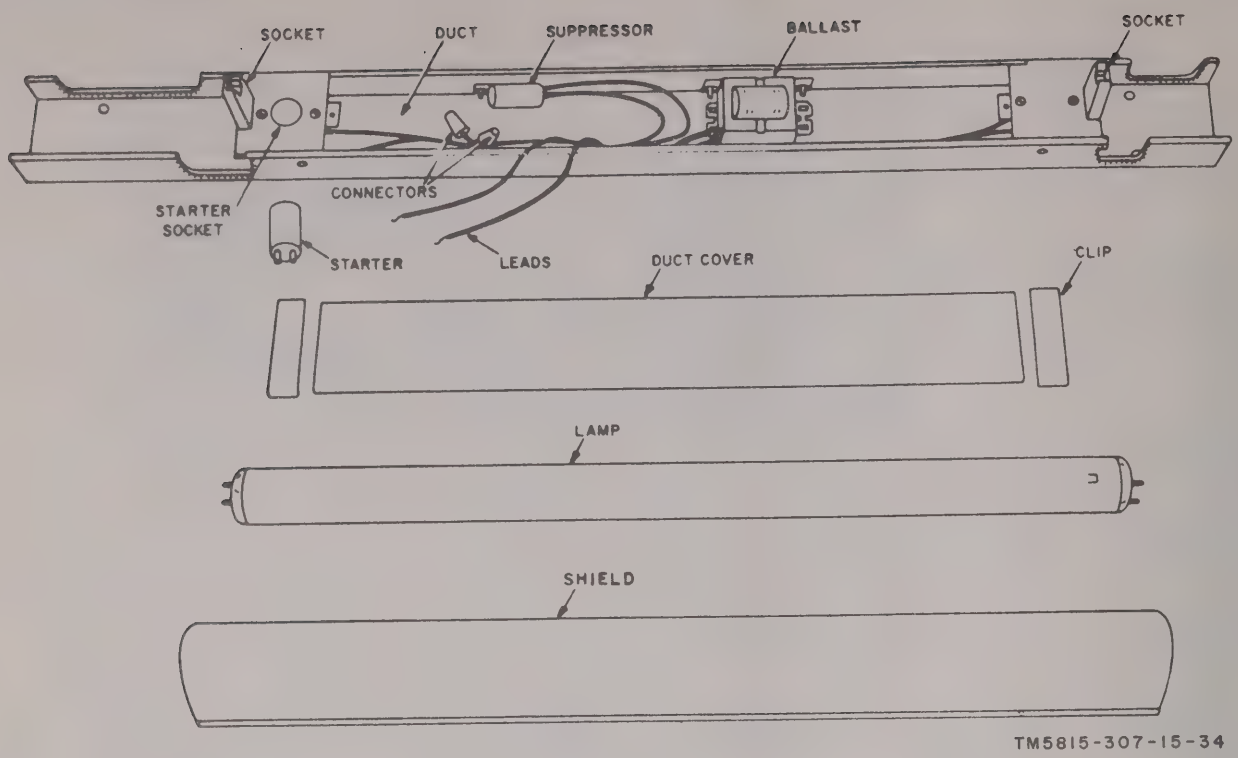


Figure 4–4. Fluorescent light fixture, interior view.

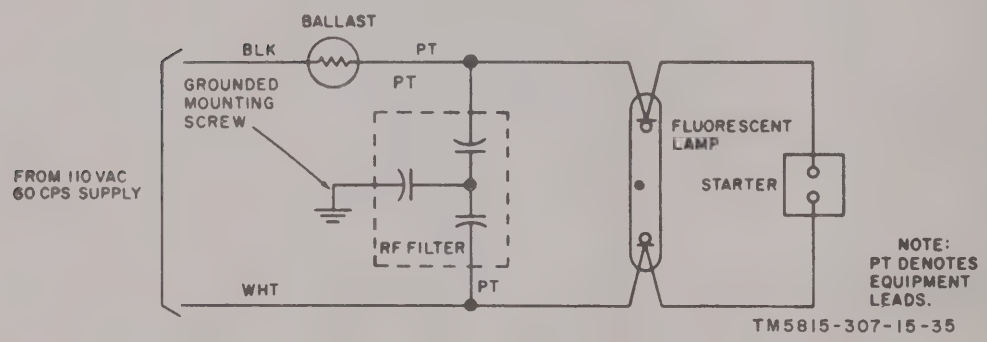


Figure 4–5. Fluorescent light fixture, schematic diagram.

(4) Connect the leads to the appropriate terminals of the new meter.

4–17. Repair of Power Cable Connectors and Power Receptacles

a. Power Cable Connectors (fig. 4–3).

(1) Unscrew the packing nut and slide the packing nut and packing glands away from the connector.

(2) Unscrew the cap and remove the clamping ring.

Caution: **Be careful when removing the clamping ring to prevent it from flying and causing serious injury.**

(3) Remove the inserts, body, gasket, and shell from the housing.

(4) Slide the cable through the housing to provide the necessary slack.

(5) Solder the contacts on the leads as required.

(6) Replace the shell, gasket, body, and inserts in the housing.

(7) Replace the clamping ring.

(8) Slide the packing glands into position against the housing.

(9) Replace the packing nut and tighten it securely.

(10) Replace the cap.

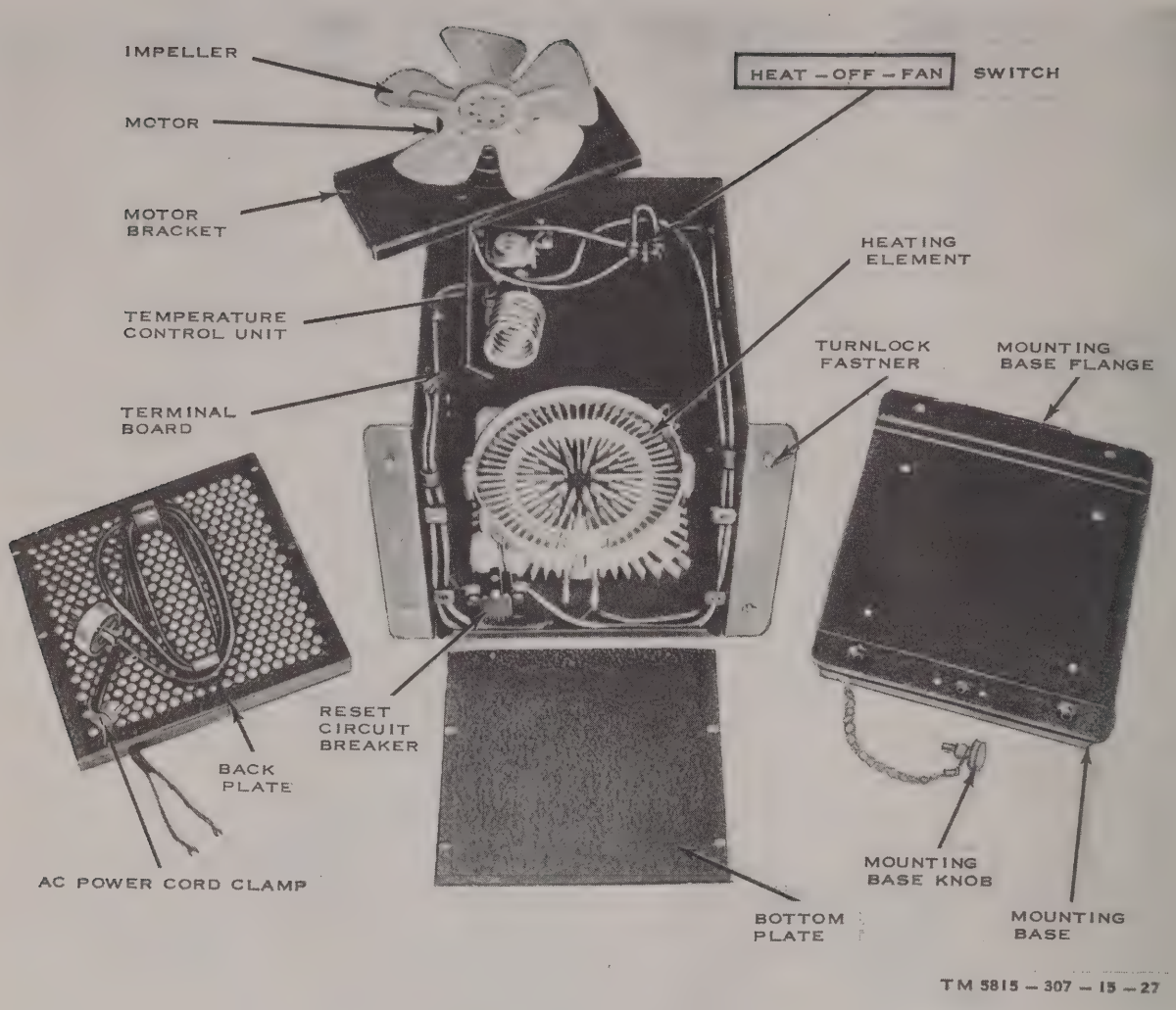


Figure 4-1. Heater, disassembled.

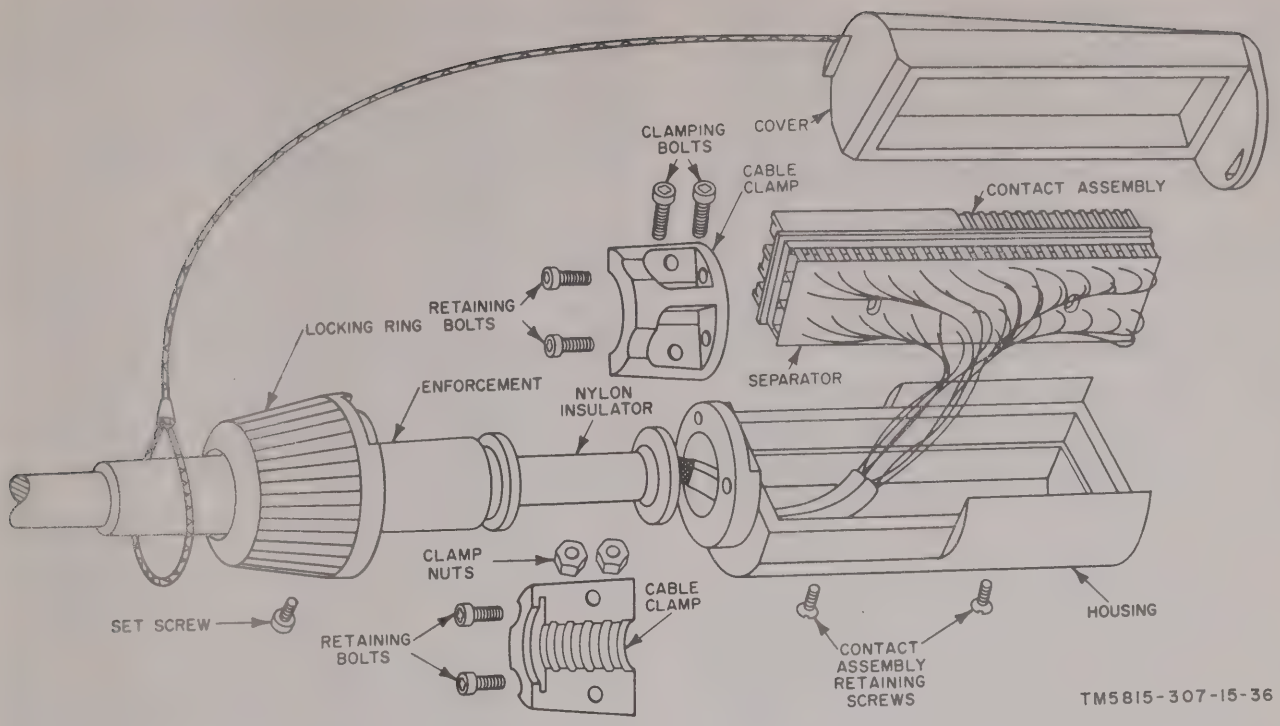


Figure 4–6. Connector, Plug, Electrical U–185B/G, exposed view.

b. Power Receptacle (fig. 4–3).

(1) Remove the signal and power entrance panel from inside the shelter facility.

(2) Remove the clamping ring from the power receptacle.

Caution: **Be careful when removing the clamping ring to prevent it from flying and causing serious injury.**

(3) Remove the inserts and contacts from the receptacle body.

(4) Solder the contacts on the leads as required.

(5) Replace the inserts and contacts in the body and secure them in position with the clamp-in ring.

(6) Replace the signal and power entrance panel.

4–18. Repair of Fluorescent Light Fixtures

Note. The fluorescent light fixtures are fabricated as part of the ceiling power duct (fig. 4–4). Filter capacitors are sealed units and cannot be repaired. They are replaced as complete units.

a. Remove the light shield and fluorescent lamp.

b. Carefully pry off the cover from the power duct.

c. Label and disconnect the wires from the defective component.

d. Remove the defective component from the power duct.

e. Secure the replacement component in the power duct.

f. Connect the wires to the replacement component (fig. 4–5).

g. Replace the cover on the power duct.

h. Replace the fluorescent lamp and the light shield.

Section III. DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE

4–19. Scope of Direct Support, General Support and Depot Maintenance

a. General. Direct support, general support, and depot maintenance consists of corrective maintenance procedures as indicated in the maintenance allocation chart (app C).

b. Tools and Test Equipment Required. The tools and test equipment required for direct and general support and depot maintenance of the AN/MGC–22 are listed in section III of the maintenance allocation chart (app C).

4–20. Direct Support Repair Procedures

a. Communication Equipment Repairs. Refer to the applicable technical manual (app A) for direct support maintenance of the communications equipment.

b. Van Equipment, Repairs. Direct support repair of the AN/MGC–22 includes the following:

(1) Emergency repair of holes and minor structural damage to the shelter facility.

(2) Removal and replacement of the door handle and latchbolt assemblies, entrance door filters, and cover assemblies and gaskets for the blower vents, the signal binding posts box, and the signal and power entrance box.

Note. Refer to TB SIG 354 for additional information on direct support maintenance of the shelter facility.

4–21. General Support Repair Procedures

a. Communication Equipment Repair. Refer to the applicable technical manual (app A) for general support maintenance of the communications equipment.

b. Van Equip-Repairs. Direct support repair of the van facility includes the following:

(1) Replacement of those items included under direct support (para 4–20*b*) and permanent repair of holes and major structural damage to the shelter. Refer to TB SIG 354 for information on direct support maintenance procedures of the van facility.

(2) The repair and replacement of wiring harness and duct cabling (para 4–22) and the repair of Connector, Receptacle, Electrical U–187A/G (para 4–23) and Plug, Electrical U–185B/G (para 4–24).

4–22. Replacement of Wiring Harness and Duct Cabling

a. General. The signal wiring (interior) of the AN/MGC–22 consists of two 26-pair cables connected between the 26-pair receptacles in the signal and power entrance box and the binding posts in the signal binding posts box, and two 26-pair cables connected between the signal binding posts box and the major equipments. The cabling connected between the signal binding posts box and the major equipments are located in the signal duct and are secured in place (bunched) by plastic straps placed around the cables at specific intervals. Replacement procedures are covered in *b* below.

b. Replacement of Interior Cables. The interior cables should *not* be replaced when only one or two pairs have become defective. Use the spare pairs as replacement for the defective pairs.

(1) If the spare pairs have been used previously and the defect can be located, repair the defect by *splicing*. If an entire cable is accidentally cut or damaged beyond repair, or if a cable has been repaired previously and not enough slack remains to permit another repair, replace the cable.

(2) To install a replacement cable; disconnect the defective cable and remove it from the ducts, cut the new cable to the proper length, and secure it in the duct. Connect the new cable using the appropriate color coding.

4–23. Repair of Connector, Receptacle, Electrical U–187A/G

a. Removal.

(1) Secure the cover of the signal and power entrance box in the open position. Remove the dust cover from the connector.

(2) Remove the cover on the signal and power entrance panel inside the van facility.

(3) Loosen and remove the two retaining screws that secure the contact assembly in the connector housing.

(4) Lift the contact assembly out of the connector housing. Be careful not to damage the leads.

(5) If necessary, work the slack in the cable harness into the connector housing.

(6) Disconnect the leads from the contact assembly. Be sure to mark the leads for identification during reassembly.

b. Reassembly.

(1) Position the new contact assembly near the connector housing and reconnect the leads. Check to be sure that each lead is connected to the proper terminal.

(2) Insert the contact assembly into the connector housing. If necessary, work some of the cable harness slack out of the connector housing.

(3) Replace the contact assembly retaining screws. Check to be sure that the contact assembly is properly seated in the connector housing.

(4) Replace the cover on the signal and power entrance panel.

(5) Replace the connector dust cover and close the cover on the signal and power entrance box.

4–24. Repair of Connector, Plug, Electrical U–185B/G

(fig. 4–6)

a. Disassembly. Disassemble the connector only as far as necessary to complete the repairs.

(1) Remove the dust cover from the connector. Remove the retaining screws from the locking ring and slide the locking ring back from the connector.

(2) Remove the two clamping bolts from the cable clamp.

(3) Remove the four retaining bolts from the cable clamp.

(4) Remove the cable clamp.

(5) Remove the contact assembly retaining screws.

(6) Slide the strain relief and the nylon insulator back onto the cable.

(7) Work the cable into the housing and lift the contact assembly out of the housing.

(8) Slide the separator away from the contact assembly and disconnect the leads.

b. Reassembly.

(1) Slide the locking ring onto the cable, if it was removed. Be sure that the wide portion is toward the connector.

(2) Slide the strain relief onto the cable with the flange toward the connector.

(3) Slide the nylon insulator onto the cable with the flange toward the connector.

(4) Slide the end of the cable into the housings.

(5) Slide the leads through the separator. Check to be sure that they are positioned for proper connection.

(6) Connect the leads to the contact assembly.

(7) Replace the contact assembly in the housing. If necessary, work the cable out of the housing to provide clearance for the contact assembly.

(8) Slide the nylon insulator toward the connector until the flange is flush against the end of the housing.

(9) Replace the two sections of the cable clamp. Secure them in position with the retaining bolts.

(10) Replace the clamping bolts and tighten them securely.

(11) Slide the locking ring into position on the housing and secure it in position with the retaining screw.

(12) Replace the dust cover on the connector.

4–25. Transmitter Contact Maintenance

The use of low-level keying devices (TT–523/GGC and TT–524/FGC) may require frequent maintenance of transmitter contacts. The low-level keying current is of insufficient value to perform the contact cleaning functioning obtained when the teletypewriters are used for normal (high-level power) operation. No time table or schedule can be set up at this time for the frequency of cleaning the contacts. Clean and burnish transmitter contacts as required.

4–26. Adjustment of TT–524/FGC

The TT–524/FGC's were properly adusted for TT–178(*)/FG and TT–119(*)/FG tape preparation when installed in the van and replacement TT–524/FGC's are also adjusted for this type of operation. When readjustment of a TT–524/FGC for this type of operation is required, refer to TM 11–5815–342–15.

4–27. Depot Maintenance

Depot maintenance of the AN/MGC–22 includes major repair and overhaul of the equipment components and the shelter facility. Refer to the applicable technical manual for the individual equipment components for depot overhaul standards and procedures.

CHAPTER 5

FUNCTIONING

5–1. General

a. The AN/MGC–22 provides facilities for four vf, synchronous, secure, full-duplex circuits and five tape preparation positions. Patchboards permit switching and checking of all signal circuits. All signal and power connections are made to connection points outside the van. Internal signal and power wiring is contained in metal ducts; power distribution panels in the van permit the control of all ac power within the van.

b. This chapter covers the functioning of only those components not covered in detail in separate publications (app A).

5–2. Dc Microampere Circuit, DC MON Jack Position Functioning

A low-level (60 to 80 μa) method of operation is used in a loop circuit which is part of the overall send circuit. The low-level current is supplied by the Comsec equipment, through the DC MON jack (panel marking in red) on the RED PATCH PANEL, through the TD signal circuit, and to the send circuit of the line unit where the telegraph signal is converted into a 20-ma, vf signal for transmission over the signal line.

Caution: **Use the special patch cord with tip, ring, and sleeve plug to patch between the DC MON (red) jack position and the MICROAMP jack position on the RED PATCH PANEL. Other plugs will not fit these two jack positions.**

5–3. SECURITY DEJECT RELAY, DEJECT-BYPASS Switch, and Security Deject Indicator Functioning

For security reasons, the teletypewriter equipment (especially send equipment) should not be operated when the telephone is in use. A deject circuit automatically stops signal transmission when the telephone plug is plugged into the PHONE jack.

a. In normal operation, the windings of the SECURITY DEJECT RELAY are energized when ac is applied to the SUPV POS AND CONV 3 circuits through circuit breaker No. 6 on power distribution panel No. 2. The energized windings cause ac contacts within the relay to close and complete the ac circuits to the COMSEC equipments.

b. When the telephone plug is plugged into the PHONE jack, adjacent to the telephone, the SECURITY DEJECT RELAY is deenergized, the ac contacts open, and ac is removed from the COMSEC equipment. This arrangement may be bypassed by placing the specially protected DEJECT-BYPASS switch, also located adjacent to the telephone, in the ON position.

c. A security deject indicator (red light) when lighted, indicates that the telephone is in use and that the ac circuits to the COMSEC equipments are open. The red inidcator light, located near the sending equipment, is panel-marked as follows: CAUTION-RED LIGHT INDICATES SECURITY DEJECT IN OPERATION. DISCONNECT PHONE FOR TRANSMISSION.

CHAPTER 6
SHIPMENT, LIMITED STORAGE, AND DEMOLITION TO PREVENT ENEMY USE

Section I. SHIPMENT AND LIMITED STORAGE

6–1. Preparation for Transit or Limited Storage

Perform the following procedures when AN/MGC–22 is to be moved to another location, or placed in limited storage.

a. Operate the MAIN circuit breaker switches on power distribution panels No. 2 and No. 3 to OFF. Operate all tributary circuit breaker switches (except circuit breaker switch No. 1 in panel No. 1) to OFF.

b. Operate all equipment component power input switches to OFF.

c. Remove all batteries from all equipments, as appropriate.

d. Place all miscellaneous items in the storage drawers and cabinets and secure the drawers and cabinets for transit.

e. Secure all components in their racks, mounting facilities, and holders.

f. Disconnect the cable and binding post connections at the entrance boxes; replace the covers on the 26-pair receptacles and connectors.

g. Wind the 26-pair and additional cables on their reels and secure the reels for transit.

h. Operate the panel No. 1 MAIN circuit breaker switch and circuit breaker switch No. 1 on panel No. 1 to OFF.

i. Turn off the power at the power source and disconnect the power cable assembly (or power cable stub) from the power source.

j. Disconnect the power cable assembly from the signal and power entrance box of the van (and from the power cable stub, if used). Replace the covers on the power receptacles and connectors.

k. Wind the power cable assembly on the cable reel and secure it for transit.

l. Disconnect the ground strap, remove the ground rod, and store the strap and rod.

m. Close and secure the covers on all exterior vents and entrance boxes.

n. Recheck the area for any loose items. Be sure that all items are properly stored in the van.

o. Clean the van thoroughly.

Caution: **When the van is placed in limited storage, open the exhaust fan vent on the curbside wall of the van. The air vent must be open to insure adequate air circulation during storage.**

p. Close and secure the entrance doors and secure the entrance steps.

6–2. Transportation

The AN/MGC–22 can be moved by tractor or transported by cargo aircraft. Reverse the procedures given in paragraph 2–1*a* to couple the van to the tractor.

Caution: **When the van is to be transported by cargo aircraft, open the exhaust fan vent on the curbside wall of the van. The exhaust fan vent must be open to insure equalization of interior air pressure during air transport.**

Section II. DEMOLITION OF MATERIEL TO PREVENT ENEMY USE

6–3. Authority for Demolition

Demolition of the equipment will be accomplished only upon the order of the commander. The destruction procedures in paragraph 6–4 will be used to prevent further use of the equipment.

6–4. Methods of Destruction

Use any or all of the following methods to destroy the equipment.

a. Smash. Smash the control, tubes, coils, relays, switches, capacitors, transformers, and meters.

b. Cut. Cut all cables and cords and slash the wiring on the components.

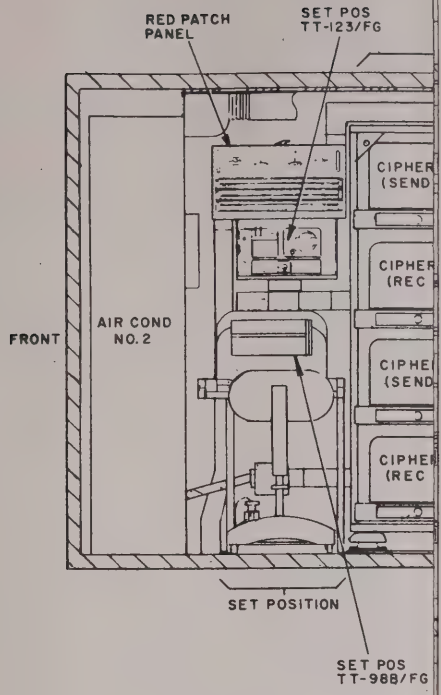
Warning: **Be extremely careful when handling explosives and incendiary devices. Use these items only when the need is urgent.**

c. Burn. Burn cords and technical manuals.

d. Bend. Bend panels, antenna components, and cabinets.

e. Explode. Explode if necessary.

f. Dispose. Bury or scatter the destroyed parts in slit trenches or foxholes, or throw them into streams or lakes.

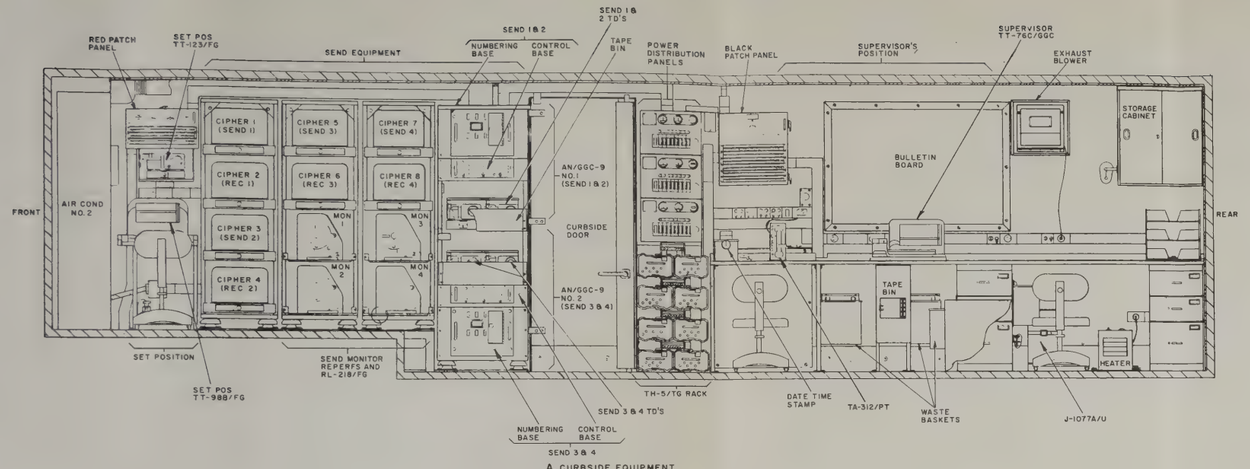

RED PATCH PANEL
SET POS TT-123/FG
CIPHER (SEND
CIPHER (REC
CIPHE (SEND
CIPHE (REC
FRONT
AIR COND NO. 2
SET POSITION
SET POS TT-988/FG

c. Burn. Burn cords and technical manuals.

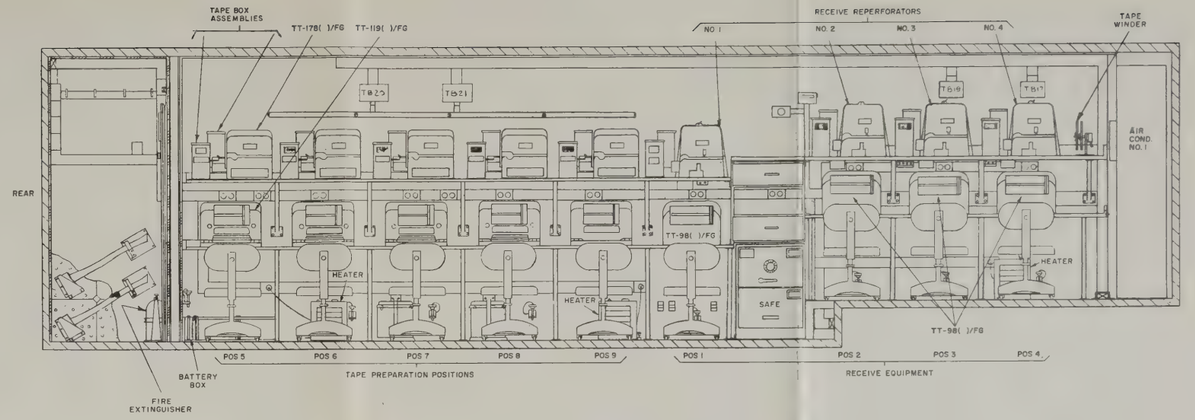
d. Bend. Bend panels, antenna components, and cabinets.

e. Explode. Explode if necessary.

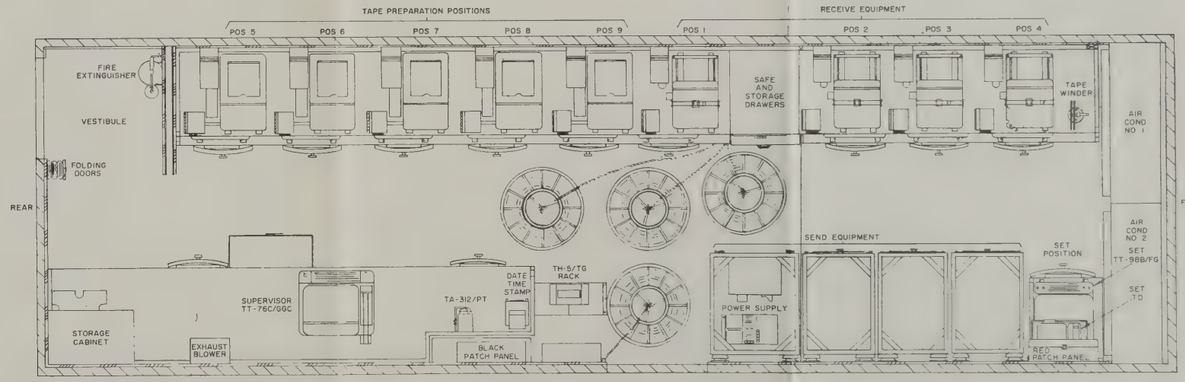
f. Dispose. Bury or scatter the destroyed parts in slit trenches or foxholes, or throw them into streams or lakes.



A. CURBSIDE EQUIPMENT



B. ROADSIDE EQUIPMENT



C. FLOOR PLAN

TM5815-307-15-3

Figure 6-1. Floor plan and wall equipment locations.

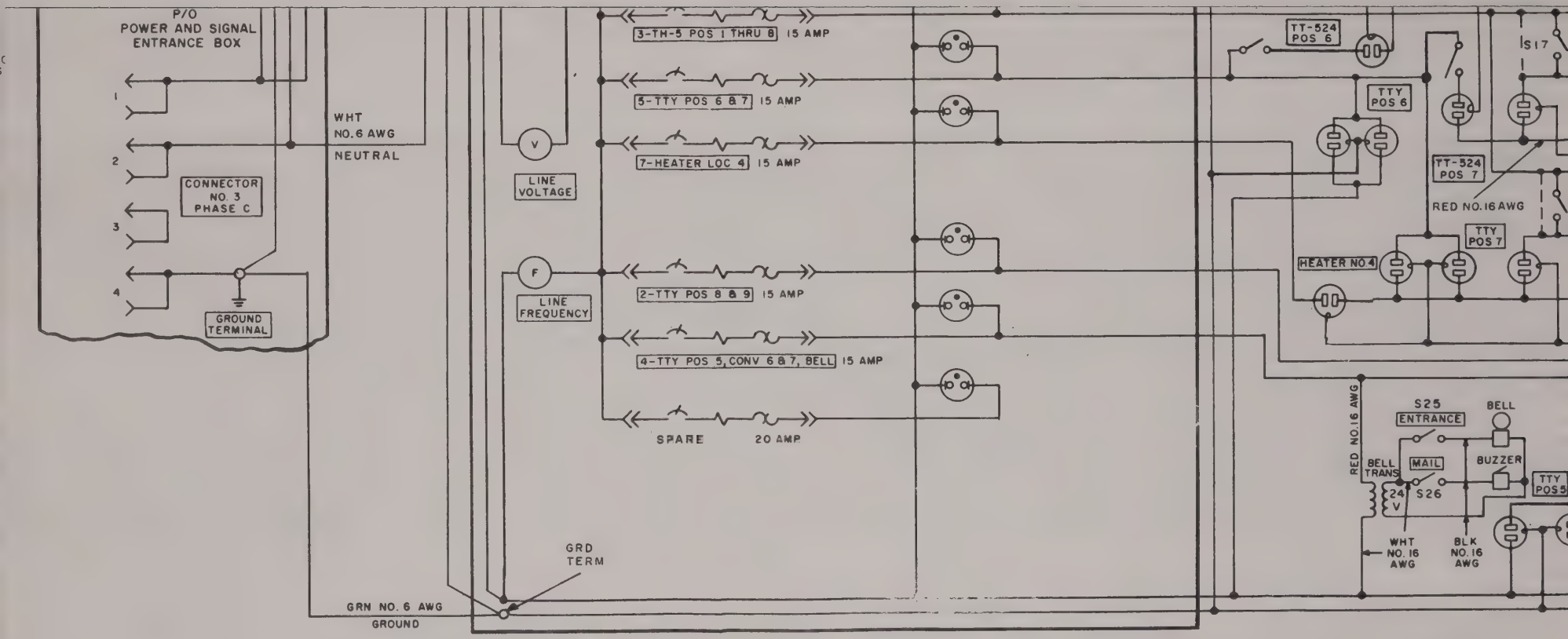


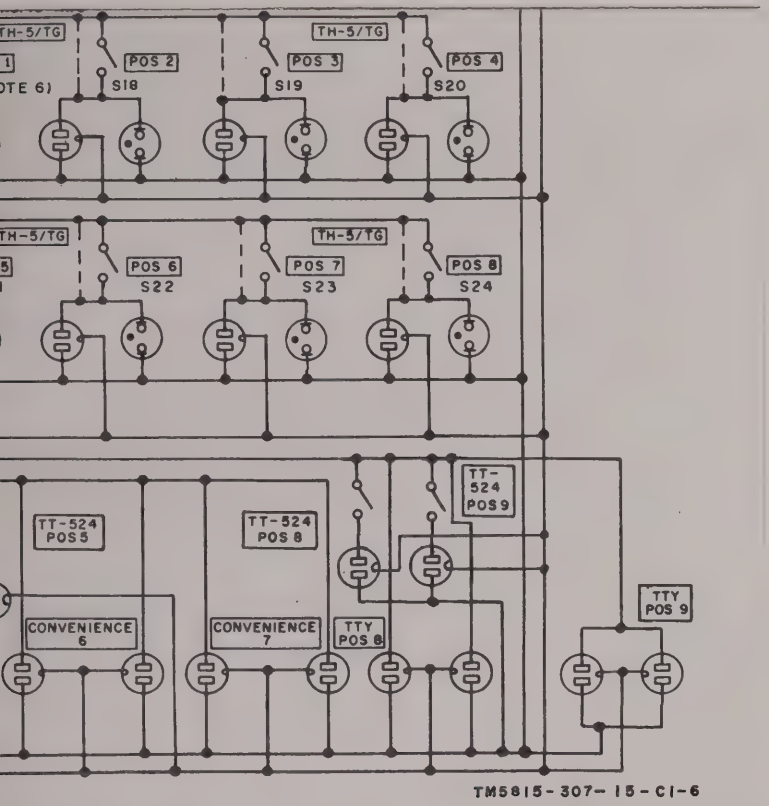
Figure 6-2. AN/MGC

NOTES:

1. ▭ INDICATES PANEL MARKING.
2. COLORS ARE AS FOLLOWS.
   HOT LEADS-BLACK (ØA), RED (ØB), WHT-RED (ØC)
   NEUTRAL LEADS-WHITE
   GROUND LEADS-GREEN
3. AC INPUT CONNECTORS A1 THRU C2 AS VIEWED FROM FRONT

4. LIGHT CONTROL RELAY SHOWN ENERGIZED
5. ACTIVATED BY SECURITY DEJECT RELAY
6. SWITCHES S-17 THRU S-24 AND ASSOCIATED INDICATOR LAMPS DELETED ON LATER MODELS USING TELEGRAPH TERMINAL, TH-22 ONLY.

Figure 6-2. AN/MGC-22, power circuits, schematic diagram.



power circuits, schematic diagram.

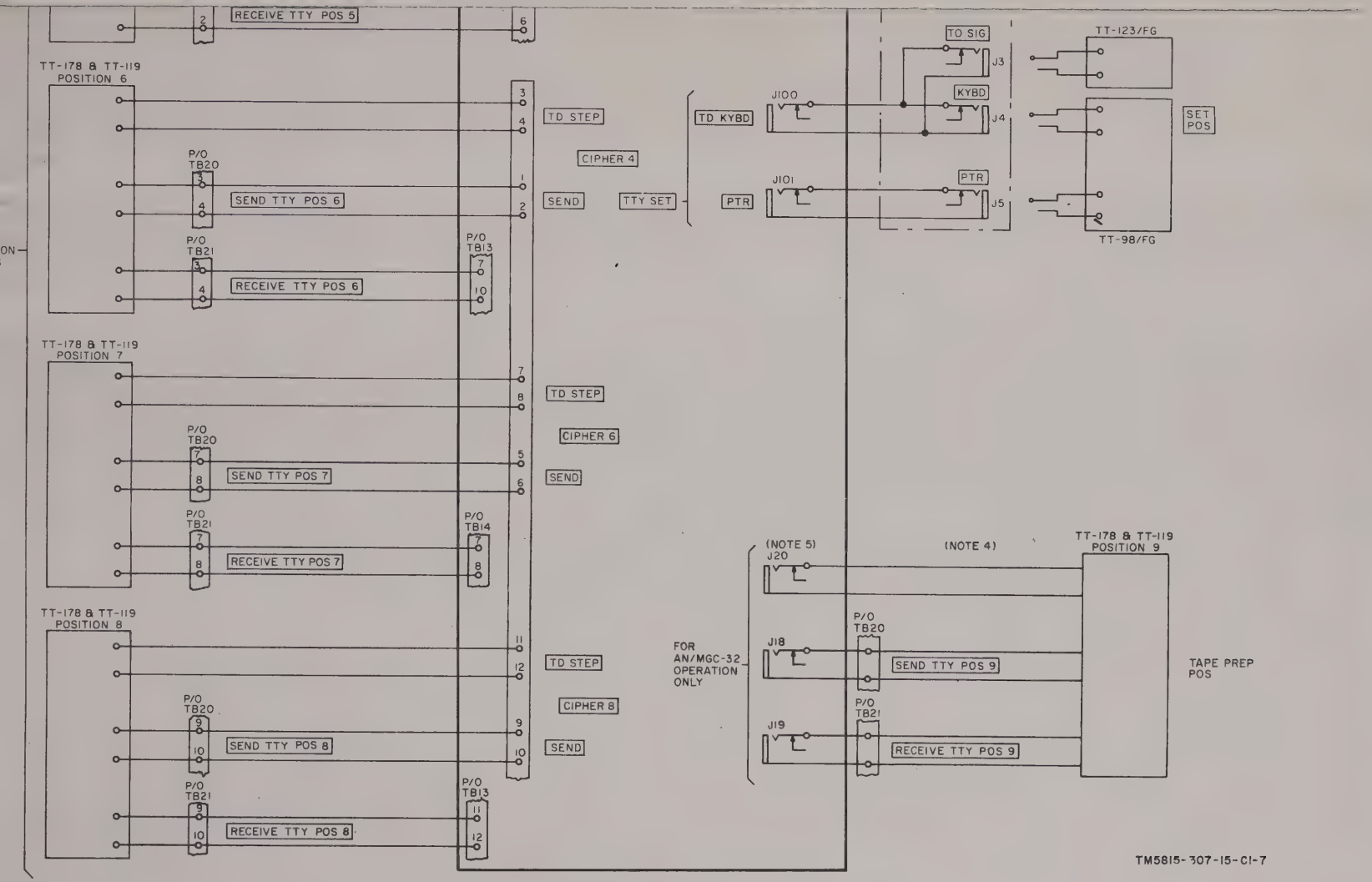
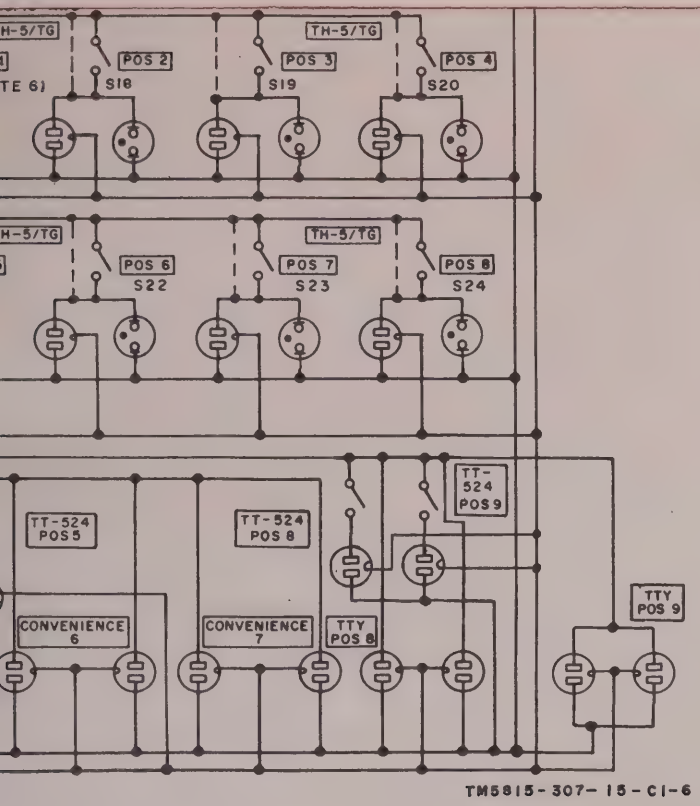
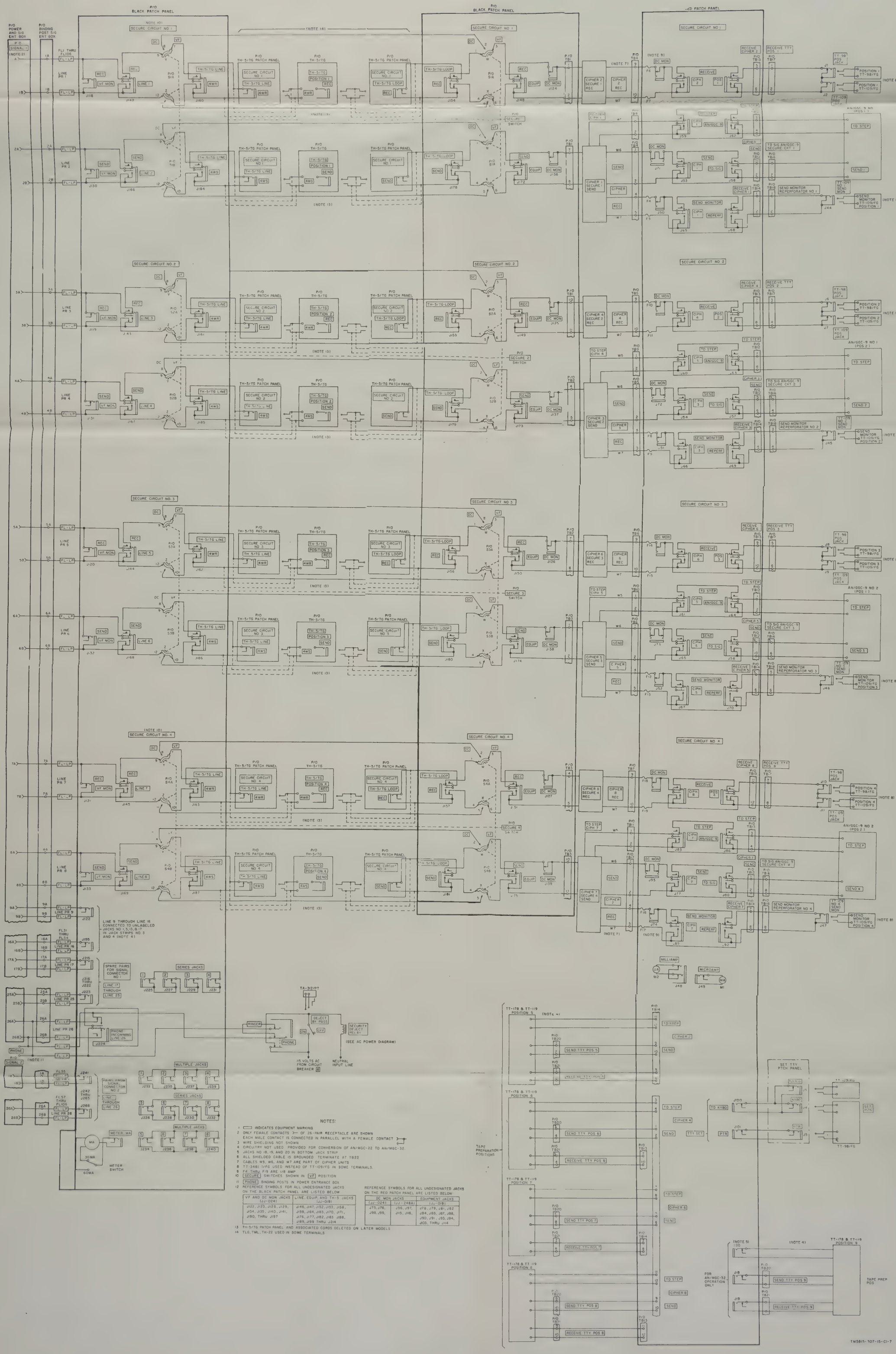


Figure 6-3. AN/MGC-22, signal schematic diagram.



power circuits, schematic diagram.



NOTES:

1. ▭ INDICATES EQUIPMENT MARKING
2. ONLY FEMALE CONTACTS)– OF 26-PAIR RECEPTACLE ARE SHOWN EACH MALE CONTACT IS CONNECTED IN PARALLEL WITH A FEMALE CONTACT)–
3. WIRE SHIELDING NOT SHOWN
4. CIRCUITRY NOT USED PROVIDED FOR CONVERSION OF AN/MGC-22 TO AN/MGC-32.
5. JACKS NO 18, 19, AND 20 IN BOTTOM JACK STRIP
6. ALL SHIELDED CABLE IS GROUNDED TERMINATE AT TB22
7. CABLES W5, W6, AND W7 ARE PART OF CIPHER UNITS
8. TT-3461 1/FG USED INSTEAD OF TT-109/FG IN SOME TERMINALS.
9. F4 THRU F19 ARE 1/8 AMP
10. SECURE SWITCHES SHOWN IN VF POSITION
11. PHONE BINDING POSTS IN POWER ENTRANCE BOX
12. REFERENCE SYMBOLS FOR ALL UNDESIGNATED JACKS ON THE BLACK PATCH PANEL ARE LISTED BELOW

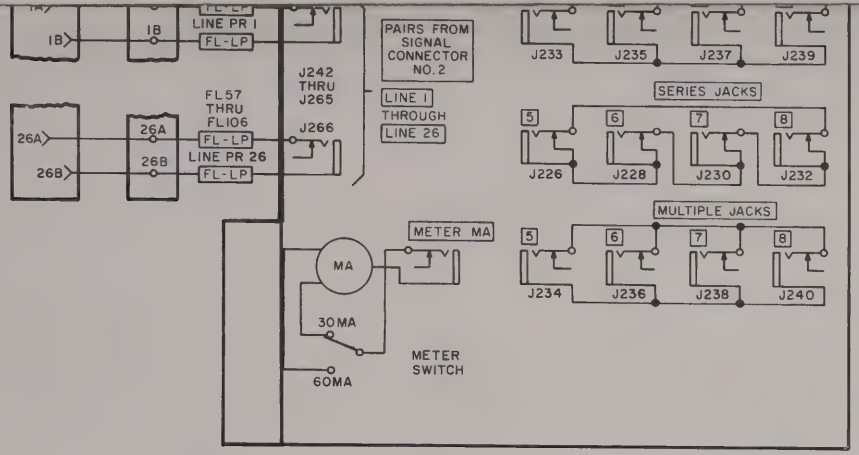
VF AND DC MON JACKS (JJ-024)	LINE, EQUIP, AND TH-5 JACKS (JJ-019)
J122, J123, J128, J129, J134, J135, J140, J141, J190, THRU J197	J146, J147, J152, J153, J158, J159, J164, J165, J170, J171, J176, J177, J182, J183, J188, J189, J199 THRU J214

REFERENCE SYMBOLS FOR ALL UNDESIGNATED JACKS ON THE RED PATCH PANEL ARE LISTED BELOW

DC MON JACKS		EQUIPMENT JACKS
(JJ-024)	(JJ-248A)	(JJ-019)
J75, J76, J98, J99,	J96, J97, J115, J116,	J78, J79, J81, J82 J84, J85, J87, J88, J90, J91, J93, J94, J100, THRU J114

13. TH-5/TG PATCH PANEL AND ASSOCIATED CORDS DELETED ON LATER MODELS
14. TLG, TML, TH-22 USED IN SOME TERMINALS

Figure 6-3. AN/MGC-22, signal schematic diagram.



NOTES:

1. ▭ INDICATES EQUIPMENT MARKING.
2. ONLY FEMALE CONTACTS ⟩— OF 26-PAIR RECEPTACLE ARE SHOWN. EACH MALE CONTACT IS CONNECTED IN PARALLEL WITH A FEMALE CONTACT ⟩●⟩
3. WIRE SHIELDING NOT SHOWN.
4. CIRCUITRY NOT USED. PROVIDED FOR CONVERSION OF AN/MGC-22 TO AN/MGC-32.
5. JACKS NO. 18, 19, AND 20 IN BOTTOM JACK STRIP.
6. ALL SHIELDED CABLE IS GROUNDED. TERMINATE AT TB22.
7. CABLES W5, W6, AND W7 ARE PART OF CIPHER UNITS.
8. TT-346( )/FG USED INSTEAD OF TT-109/FG IN SOME TERMINALS.
9. F4 THRU F19 ARE 1/8 AMP.
10. SECURE SWITCHES SHOWN IN VF POSITION
11. PHONE BINDING POSTS IN POWER ENTRANCE BOX.
12. REFERENCE SYMBOLS FOR ALL UNDESIGNATED JACKS ON THE BLACK PATCH PANEL ARE LISTED BELOW:

VF AND DC MON JACKS (JJ-024)	LINE, EQUIP, AND TH-5 JACKS (JJ-019)
J122, J123, J128, J129, J134, J135, J140, J141, J190, THRU J197	J146, J147, J152, J153, J158, J159, J164, J165, J170, J171, J176, J177, J182, J183 J188, J189, J199 THRU J214

REFERENCE SYMBOLS FOR ALL UNDESIGNATED JACKS ON THE RED PATCH PANEL ARE LISTED BELOW:

DC MON JACKS		EQUIPMENT JACKS
(JJ-024)	(JJ-248A)	(JJ-019)
J75, J76, J98, J99,	J96, J97, J115, J116,	J78, J79, J81, J82 J84, J85, J87, J88, J90, J91, J93, J94, J103, THRU J114

13. TH-5/TG PATCH PANEL AND ASSOCIATED CORDS DELETED ON LATER MODELS.
14. TLG, TML, TH-22 USED IN SOME TERMINALS.

APPENDIX A

REFERENCES

DA Pam 310–4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (types 7, 8, and 9), Supply Bulletins, and Lubrications Orders.
DA Pam 310–7	U.S. Army Equipment Index of Modification Work Orders.
TB 34–9–88	Telephone Set TA–43( )/PT, Telephone Set TA–312( )/PT, and Telephone Set TA–5003/U.
TB SIG 354	Maintenance and Repair Procedures for S–141/G, S–144/G, S–280/G, and S–318/G Type Shelters.
TB SIG 364	Field Instructions for Painting and Preserving Electronics Command Equipment.
TM 5–4120–205–12	Operator and Organizational Maintenance Manual; Air Conditioner: Floor Mtg; Air cooled; 18,000 Btu (Acme Precision Products Models) (Model AC–18,000–3) 2 Hp, Ac, 208 V, 3 Phase, 60 Cycle, Reconnectable to Ac, 120 V, 3 Phase, 60 Cycle, FSN 4120–649–9266; (Model AC–18,000–1) 2 Hp, Ac, 230 V, Single Phase, 60 Cycle, Reconnectable to AC, 115 V, Single Phase, 60 Cycle, FSN 4120–649–9267.
TM 9–213	Painting Instructions for Field Use.
TM 9–2330–246–14	Operators, Organizational and DS Maintenance Manual for Semitrailer, Van: Electronic, 6-Ton, 2-Wheel, M348A2 (2330–678–3838); M348A2C (2330–690–7724); M348A2D (2330–690–7725); M348A2F (2330–690–7726); M348A2G (2330–797–7405): M348A2H (2330–973–1262); M373A2 (2330–705–8932); M373A2C (2330–672–7496).
TM 9–2330–246–24P	Organizational, Direct and General Support Maintenance Repair Parts and Special Tool List for Semitrailer, Van: Electronic, 6-Ton, 2-Wheel: M348A2 (2330–678–3838), M348A2C (2330–690–7724), M348A2D (2330–690–7725), M348A2F (2330–690–7726), M348A2G (2330–797–7405), M348A2H (2330–973–1262), M373A2 (2330–705–8932), M373A2C (2330–672–7496).
TM 11–362	Reel Units RL–31, RL–31–B, RL–31–C, RL–31–D, and RL–31–E.
TM 11–5805–201-series	Telephone Set TA–312PT.
TM 11–2226	Teletypewriter Reperforators TT–107/FG, TT–107B/FG, TT–108/FG, TT–109/FG, TT–345/FG, TT–345A/FG, TT–346/FG, and TT–346A/FG.
TM 11–2277	Teletypewriter Distributor-Transmitters TT–122A/FG, TT–123A/FG and TT–235/FG.
TM 11–3895–202–35P	DS, GS, and Depot Maintenance Repair Parts and Special Tool Lists: Reel Units RL–31, RL–31–B, RL–31–C, RL–31–D, and RL–31–E.
TM 11–5805–201–12	Organizational Maintenance Manual: Telephone Set TA–312/PT.
TM 11–5805–201–20P	Organizational Maintenance Repair Parts and Special Tool Lists: Telephone Set TA–312/PT.
TM 11–5805–201–35	DS, GS, and Depot Maintenance Manual: Telephone Set TA–312/PT.
TM 11–5805–201–35P	Field and Depot Maintenance Repair Parts and Special Tool Lists: Telephone Set TA–312/PT.
TM 11–5805–204–15	Organizational, DS, GS, and Depot Maintenance Manual: Panel Patching, Communication SB–611/MRC including Repair Parts and Special Tool Lists.

TM 11–5805–246–ESC	Equipment Serviceability Criteria for Terminal, Telegraph TH–5/TG.
TM 11–5805–246–10	Operator's Manual: Terminal, Telegraph TH–5/TG.
TM 11–5805–246–20	Organizational Maintenance Manual: Terminal, Telegraph TH–5/TG.
TM 11–5805–246–20P	Organizational Maintenance Repair Parts and Special Tools Lists: Terminal, Telegraph TH–5/TG and TH–5A/TG.
TM 11–5805–246–35	DS, GS, and Depot Maintenance Manual: Terminal, Telegraph TH–5/TG.
TM 11–5805–246–35P	DS, GS, and Depot Maintenance Repair Parts and Special Tool Lists: Terminals, Telegraph TH–5/TG and TH–5A/TG.
TM 11–5805–356–12–25P–35	*Note.* See DA Pam 310–9 for a listing of COMSEC Equip.
TM 11–5815–200–ESC	Equipment Serviceability Criteria for: Teletypewriter Sets AN/FGC–20, AN/FGC–20X, AN/FGC–21, AN/FGC–64, AN/FGC–66, and AN/UGC–4.
TM 11–5815–200–12	Organizational Maintenance Manual, Including Repair Parts and Special Tools List: Teletypewriter Sets AN/FGC–20, AN/FGC–20X, AN/FGC–21, AN/FGC–64, AN/FGC–66, AN/FGC–67, AN/FGC–67X, AN/UGC–4, AN/UGC–29, AN/UGC–29X, and Teleprinter TT–259/FG.
TM 11–5815–200–35	DS, GS, and Depot Maintenance Manual: Teletypewriter Sets AN/FGC–20, AN/FGC–20X, AN/FGC–21, AN/FGC–64, AN/FGC–66, AN/FGC–67, AN/FGC–67X, AN/UGC–4, AN/UGC–29, AN/UGC–29X, and Teleprinter TT–259/FG.
TM 11–5815–200–35P/2	DS, GS, and Depot Maintenance Repair Parts and Special Tool Lists: Teletypewriter Sets AN/FGC–20X and AN/UGC–4.
TM 11–5815–219–20P	Organizational Maintenance Repair Parts and Special Tool Lists: Distributor-Transmitter Teletypewriters TT–122A/FG and TT–123A/FG.
TM 11–5815–219–35P	DS, GS, and Depot Maintenance Repair Parts and Special Tool Lists: Distributor-Transmitter, Teletypewriters TT–122A/FG and TT–123A/FG.
TM 11–5815–238–12	Organizational Maintenance Manual, Including Repair Parts and Special Tools List: Teletypewriter Sets AN/GGC–3 and AN/GGC–3A and Teletypewriter Reperforator-Transmitters TT–76/GGC, TT–76A/GGC, TT–76B/GGC, and TT–76C/GGC.
TM 11–5815–238–35	DS, GS, and Depot Maintenance Manual: Teletypewriter Sets AN/GGC–3 and AN/GGC–3A and Teletypewriter Reperforator-Transmitters TT–76/GGC, TT–76A/GGC, TT–76B/GGC, and TT–76C/GGC.
TM 11–5815–238–35P	DS, DS, and Depot Maintenance Repair Parts and Special Tool Lists: Teletypewriter Sets AN/GGC–3 and AN/GGC–3A, Reperforator-Transmitters, Teletypewriter TT–76GGC, TT–76A/GGC, and TT–76B/GGC, and TT–76C/GGC.
TM 11–5815–244–12	Operation and Organizational Maintenance: Teletypewriter Sets AN/FGC–25, AN/FGC–25X, AN/FGC–26, AN/FGC–26X, AN/FGC–52, AN/FGC–52X, AN/FGC–57, and AN/FGC–68.
TM 11–5815–244–20P	Organizational Maintenance Repair Parts and Special Tool Lists: Teletypewriter Sets AN/FGC–25 and AN/FGC–25X.
TM 11–5815–244–35	DS, GS, and Depot Maintenance Manual: Teletypewriter Sets AN/FGC 25, AN/FGC–25X, AN/FGC–26, AN/FGC–26X, AN/FGC–52, AN/FGC 52X, ANF/GC–57, and AN/FGC–68.
TM 11–5815–244–35P	Field and Depot Maintenance Repair Parts and Special Tool Lists: Teletypewriter Sets AN/FGC–25 and AN/FGC–25X.
TM 11–5815–257–20P	Organizational Maintenance Repair Parts and Special Tool Lists: Reperforator, Teletypewriters TT–107–FG, TT–107B/FG, TT–109/FG, TT–345/FG, TT–345A/FG, TT–346/FG, and TT–346A/FG.
TM 11–5815–257–35P	Field and Depot Maintenance Repair Parts and Special Tool Lists: Reperforators, Teletypewriter TT–107/FG, TT–107B/FG, TT–109/FG, TT–345/FG, TT–345A/FG, TT–346/FG, and TT–346A/FG.
TM 11–5815–281–12	Operator and Organizational Maintenance Manual: Distributor-Transmitter Set, Teletypewriter AN/GGC–9.

TM 11–5815–281–35	Field and Depot Maintenance Manual: Distributor-Transmitter Set, Teletypewriter AN/GGC–9.
TM 11–5815–281–35P	Field and Depot Repair Parts and Special Tools List: Distributor-Transmitter Set, Teletypewriter AN/GGC–9.
TM 11–5965–224–15P	Operator, Organizational, Field and Depot Maintenance Repair Parts and Special Tool Lists and Maintenance Chart: Handsets H–60/PT and H–165U.
TM 11–6110–201–15P	Operator, Organizational, Field and Depot Maintenance Repair Parts and Special Tool Lists and Maintenance Allocation Chart: Distribution Boxes J–1077/U and J–1077A/U.
TM 5–6115–376–15	Operator, Organizational, Field and Depot Maintenance Manual: Generator Set, Diesel Engine, Trailer Mounted PU–407/M and Generator Set, Diesel, Truck Mounted PU–408/M.
TM 11–6625–366–15	Organizational, DS, GS, and Depot Maintenance Manual: Multimeter TS–352B/U.
TM 11–6625–366–25P	Organizational, DS, GS, and Depot Maintenance Repair Parts: Multimeter TS–352B/U.
TM 38–750	Army Equipment Record Procedures.

APPENDIX B

BASIC ISSUE ITEMS LIST AND ITEMS TROOP INSTALLED OR AUTHORIZED LIST

Section I. INTRODUCTION

1. Scope

This appendix lists basic issue items required by the crew/operator for installation, operation, and maintenance of the AN/MGC-22.

2. General

This basic issue items and items troop installed or authorized list is divided into the following sections:

a. Basic Issue Items List—Section II. A list, in alphabetical sequence, of items which are furnished with, and which must be turned in with the end item.

b. Items Troop Installed or Authorized List—Section III. Not applicable.

3. Explanation of Columns

The following provides an explanation of columns found in the tabular listings:

a. Illustration. This column is divided as follows:

(1) *Figure Number.* This column indicates the figure number of the illustration in which the item is shown.

(2) *Item Number.* Not applicable.

b. Federal Stock Number. This column indicates the Federal stock number assigned to the item which will be used for requisitioning purposes.

c. Part Number. This column indicates the primary number used by the manufacturer (individual, company, firm, corporation, or government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications standards, and inspection requirements, to identify an item or range of items.

d. Federal Supply Code for Manufacturer (FSCM). The FSCM is a 5-digit numeric code used to identify the manufacturer, distributor, or Government agency; etc., and is identified in SB 708-42.

e. Description. This column indicates the Federal item name and a minimum description required to identify the item.

f. Unit of Measure (U/M). This column indicates the standard or basic quantity of the listed item as used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation, (e.g., ea, in, pr; etc.). When the unit of measure differs from the unit of issue, the lowest unit of issue that will satisfy the required units of measure will be requisitioned.

g. Quantity Furnished with Equipment. This column indicates the quantity of the basic issue item furnished with the equipment.

4. Special Information

Usable-on codes are included in column 3. Uncoded items are applicable to all models. Identification of the usable-on codes are as follows:

Code	*Used on*
1	V-317/MGC fabricated by Tobyhanna Army Depot, QR-66-43.
2	V-317/MGC manufactured by Electro-Magnetic, Ind, contract DA-36-039-AMC-05599(E).

Section II. BASIC ISSUE ITEMS LIST

(1) Illustration (A) Fig. No.	(1) Illustration (B) Item No.	(2) Federal stock Number	(3) Part Number	(4) FSCM	(5) Description	(5) Usable—on code	(6) Unit of meas	(7) Qty furn with equip
					SEMI-TRAILER VAN, ELECTRIC EQUIPMENT V-317/MGC			
6-1		5110-293-2339	SC-C-539451	(80063)	AXE, SINGLE BIT	1,2	EA	2
6-1		4210-595-4085	SC-C-539468	(80063)	BRACKET: F/FIRE EXTINGUISHER	1,2	EA	1
		7920-166-6062	SC-B-379217	(80063)	COVER, BROOM	1,2	EA	1
6-1		4210-270-4512	SC-D-539482	(80063)	EXTINGUISHER, FIRE	1,2	EA	1
		6545-922-1200			FIRST AID KIT	1,2	EA	1
		5120-608-0109	SC-C-539505	(80063)	HAMMER, HAND	1,2	EA	1
6-1		5975-224-5260			ROD, GROUND MX-148/G	1,2	EA	2

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APPENDIX C

MAINTENANCE ALLOCATION

Section I. INTRODUCTION

C–1. General

This appendix provides a summary of the maintenance operations covered in the equipment literature for Teletypewriter Terminal AN/MGC–22. It authorizes categories of maintenance for specific maintenance functions on repairable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.

C–2. Explanation of Format For Maintenance Allocation Chart

a. Group Number. Group numbers correspond to the reference designation prefix assigned in accordance with ASA Y32.16, Electrical and Electronics Reference Designations. They indicate the relation of listed items to the next higher assembly.

b. Component Assembly Nomenclature. This column lists the item names of component units, assemblies, subassemblies, and modules on which maintenance is authorized.

c. Maintenance Function. This column indicates the maintenance category at which performance of the specific maintenance function is authorized. Authorization to perform a function at any category also includes authorization to perform that function at higher categories. The codes used represent the various maintenance categories as follows:

Codes	*Maintenance category*
C	Operator/Crew
O	Organizational Maintenance
F	Direct Support Maintenance
H	General Support Maintenance
D	Depot Maintenance

d. Tools and Equipment. The numbers appearing in this column refer to specific tools and equipment which are identified by these numbers in section III.

e. Remarks. Self-explanatory.

C–3. Explanation of Format for Tool and Test Equipment Requirements

The columns in the tool and test equipment requirements chart are as follows:

a. Tools and Equipment. The numbers in this column coincide with the numbers used in the tools and equipment column of the MAC. The numbers indicate the applicable tool for the maintenance function.

b. Maintenance Category. The codes in this column indicate the maintenance category normally allocated the facility.

c. Nomenclature. This column lists tools, test, and maintenance equipment required to perform the maintenance functions.

d. Federal Stock Number. This column lists the Federal stock number.

e. Tool Number. Not used.

MAINTENANCE ALLOCATION CHART

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTIONS											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
A	TELETYPEWRITER TERMINAL AN/MGC-22	C		C										Preventive maintenance
		O		O									3,5	
			C											Operational
			O										1	Signal, lighting, power checks
			F										1,4,6	Test in accordance with
			H										1,2,4,6	component allocation
										O			3,5,6	Repair in accordance with
										F			3,4,5,6	component allocation
										H			4,5,6	
											H		4,5,6	By component
												D	6	Van only (USAMEC responsibility)
A1	DISTRIBUTION BOX J-1077A/U									#			6	See TM 11-6110-201-15P
A2	DISTRIBUTION-TRANSMITTER SET, TELETYPEWRITER AN/GGC-9									#			6	See TM 11-5815-281-12
A3	DISTRIBUTION-TRANSMITTER, TELETYPEWRITER TT-123( )/FG									#			6	See TM 11-2277
A4	KEY GENERATOR TSEC/KW-7								F				6	USASCC responsibility
A5	REPERFORATOR, TELETYPEWRITER TT-346( )/FG									#			6	See TM 11-2226
A6	REPERFORATOR TRANSMITTER TELETYPEWRITER TT-76( )/FG									#			6	See TM 11-5815-238-12
A6a	SIGNAL DEVICE, LOW LEVEL TT-523/GGC		O						O					Operational
A7	TELETYPEWRITER TT-98( )/FG								O				6	
A8	TELETYPEWRITER TAPE REWIND RL-218/UG								O				3	
A8a	MOTOR								F				3	
A9	TELETYPEWRITER TT-119( )/FG									#			6	See TM 11-5815-244-12
A10	TELETYPEWRITER REPERFORATOR TT-178( )/FG									#			6	See TM 11-5815-244-12
A11	TERMINAL TELEGRAPH TH-22/TG									#			6	See TM 11-5805-356-12

MAINTENANCE ALLOCATION CHART

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTIONS											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
	AN/MGC-22 (continued)													
A12	VAN, SEMI-TRAILER V-317/MGC		O										1	Signal, lighting, power
			F										1	Electrical items only
			H										1,2	
										F			6	USAMEC responsibility
										H			6	USAMEC responsibility
												D	6	USAMEC responsibility
A12a	AIR CONDITIONER 18000 BTU									H			6	USAMEC responsibility
A12b	CABLE ASSEMBLIES (POWER AND SIGNAL)		O										1	Continuity
			H										2	
									O				3	
										F			3	
										H			3	
A12c	EXTINGUISHER, FIRE								O					Corps engineer
A12d	HEATER, ELECTRIC 1.5 KW								F					USAMEC responsibility
A12e	REEL UNIT RL-31E								O					
A12f	SIGNAL DEVICE, LOW LEVEL TT-524/GGC		O											Operational
			F										1	Continuity
									F				3	
										F			6	
A12g	TELEPHONE SET TA-312/PT									#			6	See TM 11-5805-201-12

NOTE: #Indicates that maintenance guidance will be found in documents referenced in remarks column.

TOOL AND TEST EQUIPMENT REQUIREMENTS

TOOLS AND EQUIPMENT	MAINTENANCE CATEGORY	NOMENCLATURE	FEDERAL STOCK NUMBER	TOOL NUMBER
		AN/MGC-22 (continued)		
1	O,F,H,D	MULTIMETER TS-352D/U (TO BE REPLACED BY AN/USM-223)	6625-242-5023	
2	H,D	OHMMETER ZM-21A/U	6625-581-2466	
3	O,F	TOOL EQUIPMENT TE-123		
4	F,H,D	TOOL KIT TE-50B	5180-356-4602	
5	O,F,H,D	TOOL KIT, GENERAL MECHANICS	5180-754-0641	
6	O,F,H,D	TOOLS AND TEST EQUIPMENT ASSOCIATED WITH COMPONENTS		
		NOTE: DEPOT MAY USE ANY OTHER TOOLS AND TEST EQUIPMENT REQUIRED TO OVERHAUL OR REBUILD THIS ASSEMBLAGE		

APPENDIX D

ORGANIZATIONAL, DS, GS, AND DEPOT REPAIR PARTS

Section I. INTRODUCTION

D–1. Scope

This appendix contains a list of repair parts, required for the performance of organizational maintenance and a list covering the corresponding requirements for direct support, general support, and depot maintenance for Teletypewriter Terminal AN/MGC–22.

Note. No special tools, test, and support equipment are required.

D–2. General

The repair parts list is divided into the following sections.

a. Prescribed Load Allowance (PLA), Section II. The PLA is a consolidated listing of repair parts allocated for initial stockage at the organizational maintenance category. This is a mandatory minimum stockage allowance.

b. Repair Parts for Organizational Maintenance, Section III. Repair parts authorized for organizational maintenance are included in this section.

c. Repair Parts for Direct Support, General Support, and Depot Maintenance, Section IV. Repair parts authorized for direct support, general support, and depot maintenance are included in this section.

Note. All indexes noted below are cross-referenced to index numbers. The index numbers appear in ascending sequence in column 1 of the repair parts list (para D–3*a*). The index number for the particular item will be the same for the item in all sections of this appendix.

d. Federal Stock Number Cross-Reference to Index Number, Section V. This is a cross-reference index of Federal stock numbers to index numbers.

e. Figure and Item Number Cross-Reference to Index Number, Section VI. This is a cross-reference index of figure number and item number (or reference designation) to index number. The figure numbers are listed in numerical sequence; item numbers and/or reference designations are listed for each figure.

f. Reference Designation Cross-Reference to Index Number, Section VII. This is a cross-reference index of reference and/or item numbers to index numbers.

Note. This index is arranged in groups.

D–3. Explanation of Columns

An explanation of the columns is given below:

a. Source, Maintenance, and Recoverability Codes (SMR) and Index Numbers Column. The first line in this column lists the applicable SMR codes for the part. Listed in ascending order directly below the SMR codes is the index number assigned to the repair part.

(1) *Source code (S).* The selection status and source for the listed item is noted here. Source codes and their explanations are as follows:

Code	*Explanation*
P	Applies to repair parts that are stocked in or supplied from the GSA/DSA, or Army supply system, and authorized for use at indicated maintenance categories.
A	Applies to assemblies that are not procured or stocked as such but are made up of two or more units, each of which carries an individual stock number and description and is procured and stocked and can be assembled by units at indicated maintenance categories.

(2) *Maintenance code (M).* The lowest category of maintenance authorized to install the listed item is noted here.

Code	*Explanation*
C	Operator/Crew
O	Organizational Maintenance
F	Direct Support Maintenance
H	General Support Maintenance

(3) *Recoverability code (R).* The information in this column indicates whether unserviceable items should be returned for recovery or salvage. Recoverability code and its explanation is as follows:

Note. When no code is indicated in the recoverability column, the part will be considered expendable.

Code	Explanation
R	Applies to repair parts and assemblies which are economically repairable at DSU and GSU activities and normally are furnished by supply on an exchange basis.

b. Federal Stock Number Column. The Federal stock number for the item is listed in this column.

c. Description Column. This column includes the Federal item name and any additional description of the item required, the manufacturer's part number (reference number), and the applicable five-digit Federal supply code for manufacturers (para D–5). Also included in this column are the designators, 1, 2, etc., listed under the heading *Usable on code.* The designators, which are explained at the beginning of the description column in the repair parts list, indicate that the part is used on the model or serially numbered groups so identified.

d. Unit of Issue Column. The unit used as a basis of issue (e.g., ea, pr, ft, yd, etc.) is indicated in this column.

e. Quantity Incorporated in Unit Pack Column. Not used.

f. Quantity Incorporated in Unit Column. The quantity of repair parts in an assembly is given in this column.

g. Maintenance Allowances Column.

(1) The maintenance allowance columns are divided into subcolumns. Indicated in each subcolumn is the total quantity of items authorized for the number of equipments supported. Items authorized for use as required, but not for initial stockage, are identified with an asterisk (*) in the allowance column.

(2) The quantitative allowances for organizational category of maintenance represents one initial prescribed load for a 15-day period for the number of equipments supported. Units and organizations authorized additional prescribed loads will multiply the number of prescribed loads authorized by the quantity of repair parts reflected in the appropriate density column to obtain the total quantity of repair parts authorized.

(3) Subsequent changes to organizational allowances will be limited as follows: No change in the range of items is authorized. If additional items are considered necessary, recommendation should be forwarded to Commanding General, U.S. Army Electronics Command, ATTN: AMSEL–ME–NMP–CW, Fort Monmouth, N.J. 07703, for exception or revision to the allowance list. Revisions to the range of items authorized will be made by the USA ECOM National Maintenance Point based upon engineering experience, demand data, or TAERS information.

(4) The quantitative allowances for the DS/GS categories of maintenance will represent initial stockage for a 30-day period for the number of equipments supported.

h. One-Year Allowances Per 100 Equipments Contingency Planning Purposes Column. The total quantity required for distribution and contingency planning purposes is indicated in this column. The range of items indicates total quantities of all authorized items required to provide for adequate support of 100 equipments for one year.

i. Depot Maintenance Allowance Per 100 Equipments Column. This column indicates the total quantity of each item authorized depot maintenance for 100 equipments.

j. Illustration Column.

(1) *Figure number (a).* The number of the illustration in which the item is shown is indicated in this column.

(2) *Item No. or reference designation (b).* The callout number or reference designation used to reference the item in the illustration appears in this column.

D–4. Location of Repair Parts

a. This manual contains three cross-reference indexes (Sec. V, VI, and VII), to be used to locate a repair part when either the Federal stock number, reference number (manufacturer's part number), figure number, or reference designation and/or item number is known. The first column in each cross-reference index is prepared, as applicable, in numerical or alphanumerical sequence. The last column of each cross-reference index lists the index number assigned to the part.

b. Refer to the appropriate cross-reference index (para D–2*e, f, g,*) and note the index number in the last column; then refer to the repair parts list to locate the index number which is listed in ascending order in column 1 of the repair parts list.

D–5. Federal Supply Codes

This paragraph lists the Federal supply code with the associated manufacturer's name.

Code	Manufacturer
04009	Arrow-Hart and Hegeman Electric Co.
05571	Sprague Electric Co. Pacific Div.
11755	Chelsea Clock Co.
19557	Edwards Co., Inc.
19634	Laduby Flur-O-Lock Co., Inc.
23404	Callboy Company
24455	General Electric Co Lamp Div of Consumer Products Group
28996	Holcomb and Hoke Mfg. Co. Inc.
29335	Hoover Co.

Code	Manufacturer
40931	Honeywell, Inc.
45092	Osborn Mfg. Co.
71183	Bryant Electric Co.
71400	Bussmann Mfg. Div. of McGraw Edison Co.
72619	Dialight Corp.
73917	Kellems Co.
74545	Hubbell Harvey, Inc.
75582	Leviton Mfg. Co.
75915	Littlefuse, Inc.
77166	Pass and Seymour, Inc.
77342	American Machine and Foundry Co. Patter and Brumfield Div.
80063	Army Electronics Command
81349	Military Specifications
81831	Filtron Co., Inc.
82877	Rotron Mfg. Co., Inc.
88065	Burwen Frank Co.
90211	Square D Co.
91929	Honeywell, Inc., Micro Switch Div.
92239	Whiteford Laboratory
93993	Midwest Electric Products, Inc.
94156	Western Electric Co., Inc., Indianapolis Works
94227	Nu Tone, Inc.
95344	Economy Cable Grip Co.

SECTION II. PRESCRIBED LOAD ALLOWANCE

(1) FEDERAL STOCK NUMBER	(2) DESCRIPTION	USABLE ON CODE	(3) 15-DAY ORG. MAINT. ALLOWANCE (a) 1-5	(b) 6-20	(c) 21-50	(d) 51-100
	SEMI-TRAILER VAN, ELECTRONIC EQUIPMENT V-317/MGC NOTE: Usable on code 1 refers to V-317/MGC fabricated by Tobyhanna Army Depot, QR-66-43; 2 refers to V-317/MGC manufactured by Electro-Magnetic, Ind, contract DA-36-039-AMC-05599(E).					
5120-776-9917	GRIP, CABLE, JAW: EQA6-8P; 95344	1,2	*	*	2	2
5120-776-9918	GRIP, CABLE, JAW: EQA-26S; 95344	1,2	*	*	*	2
5310-926-5451	LEVEL, BENCH: Mtd on van to level it when setting up for operation; SC-B-506635; 80063	1,2	*	*	*	2
5815-126-8140	HOLDER, TAPE GUIDE: SC-B-31336; 80063	1,2	*	*	*	2
5920-060-2424	FUSE, CARTRIDGE: F02A250VSAS; 81349	1,2	2	2	6	11
5920-280-4960	FUSE, CARTRIDGE: F02A250V2AS; 81349	1,2	2	2	6	11
5920-356-2188	FUSE, CARTRIDGE: Red patch panel; F02A250V1-8AS; 81349	1,2	9	30	70	136
5920-356-2193	FUSE, CARTRIDGE: F02A250V1-2AS; 81349	1,2	2	2	6	11
5925-926-0863	CABLE ASSEMBLY, TELEPHONE: Approx 2 ft 6 in lg; PJ-047B plug each end; SC-C-506302-GP4; 80063	1,2	*	*	*	2
5935-045-9832	CONNECTOR, RECEPTACLE, ELECTRICAL U-187A/G: 26 pair cable conn	1,2	*	*	*	2
5935-064-5731	CONNECTOR, PLUG, ELECTRICAL U-237A/G: F/power cable assys	1,2	*	*	2	2
5940-254-2244	CAP, ELECTRICAL: F/U-106/U; SC-C-76202-1; 80063	1,2	2	2	3	6
5975-224-5260	ROD, GROUND MX-148/G	1,2	*	*	2	2
5995-879-9676	CABLE ASSEMBLY, TELEPHONE: Approx 42 in lg; 3 spade lugs one end, 1 four pin Sunbank A06-184P-42 connector other end; SC-C-508812; 80063	1,2	*	*	2	2
5995-879-9678	CABLE ASSEMBLY, TELEPHONE: Approx 40 in lg; 3 spade lugs one end, 1 four pin Sunbank A06-14S7PX-42 connector other end; SC-C-512367; 80063	1,2	*	*	2	2
5995-879-9688	CABLE ASSEMBLY, POWER ELECTRICAL: Approx 60 in lg; 1 UP-121/M connector one end, 1 three pin Sunbank A06-14S7S-42 connector other end; SC-C-508805; 80063	1,2	*	*	2	2
5995-889-1500	CABLE ASSEMBLY ASSEMBLY, POWER ELECTRICAL CX-7453/U: (100 ft lg)	1,2	*	*	2	2

SECTION II. PRESCRIBED LOAD ALLOWANCE (CONTINUED)

(1) FEDERAL STOCK NUMBER	(2) DESCRIPTION	USABLE ON CODE	(3) 15-DAY ORG. MAINT. ALLOWANCE (a) 1-5	(b) 6-20	(c) 21-50	(d) 51-100
5995-926-0783	CABLE ASSEMBLY, TELEPHONE: Approx 1 ft 6 in lg; PJ-039R plug each end; SC-C-506304-GP1; 80063	1,2	*	*	*	2
5995-926-0784	CABLE ASSEMBLY, TELEPHONE: Approx 2 ft lg; PJ-309R plug each end; SC-C-506304-GP2; 80063	1,2	*	*	*	2
5995-926-0785	CABLE ASSEMBLY, TELEPHONE: Approx 1 ft lg; PJ-047B plug each end; SC-C-506302-GP1; 80063	1,2	*	*	2	2
5995-926-0786	CABLE ASSEMBLY, TELEPHONE: Approx 1 ft 6 in lg; PJ-047B plug each end; SC-C-506302-GP2; 80063	1,2	*	*	2	2
5995-926-0787	CABLE ASSEMBLY, TELEPHONE: Approx 2 ft lg; PJ-047B plug each end; SC-C-506302-GP3; 80063	1,2	*	*	2	2
5995-926-0789	CABLE ASSEMBLY, TELEPHONE: Approx 2 ft 6 in lg; PJ-047R plug each end; SC-C-506303-GP4; 80063	1,2	*	*	*	2
5995-926-0790	CABLE ASSEMBLY, TELEPHONE: Approx 1 ft lg; PJ-047R plug each end; SC-C-506303-GP1; 80063	1,2	*	*	2	2
5995-926-0791	CABLE ASSEMBLY, TELEPHONE: Approx 2 ft lg; PJ-047R plug each end; SC-C-506303-GP3; 80063	1,2	*	*	2	2
5995-926-0792	CABLE ASSEMBLY, TELEPHONE: Approx 1 ft 6 in lg; PJ-047R plug each end; SC-C-506303-GP2; 80063	1,2	*	*	2	2
6210-757-9694	RETAINER, LAMP, FLUORESCENT: P-40; 19634	1,2	*	2	2	3
6210-921-6682	SHIELD, LIGHT: F/fluorescent; SC-C539466; 80063	1,2	*	2	2	3
6230-239-3518	LIGHT, EXTENSION: SC-C-539496; 80063	1,2	*	*	*	2
6230-729-9614	LANTERN, ELECTRIC: SC-D-539491; 80063	1,2	*	*	*	2
6240-246-5052	LAMP, INCANDESCENT: 100A/RS; 24455	1,2	*	*	2	2
6250-299-2884	STARTER, FLUORESCENT: FS-2; 71183	1,2	2	2	3	6
8130-656-1090	REEL, CABLE RC-435/U	1,2	*	*	2	2
	POWER GROUP					
5910-553-6096	FILTER: F/fluorescent; SC-C-33033-4; 80063	1,2	*	2	2	3
5915-999-2757	FILTER: FSR-111E; 81831	1,2	*	*	*	2
5920-943-2608	FUSEHOLDER: F/red patch panel; 340146; 71915	1,2	*	*	2	2
5925-089-9928	CIRCUIT BREAKER: Q1-2100; 90211	1,2	*	*	2	2
5925-682-1061	CIRCUIT BREAKER: Q0-115; 90211	1,2	*	2	2	3
5925-823-2485	CIRCUIT BREAKER: Q0-150; 90211	1,2	*	*	*	2
5930-228-0204	SWITCH, TOGGLE: F/TH-5/TG or TH-22/TG on-off; 86994AF; 04009	1,2	*	*	2	2
5930-241-8954	SWITCH, SENSITIVE: Opens fluorescent light ckts when doors are open; BZ-2RQ1-A2; 91929	1,2	*	*	2	2

SECTION II. PRESCRIBED LOAD ALLOWANCE (CONTINUED)

(1) FEDERAL STOCK NUMBER	(2) DESCRIPTION	USABLE ON CODE	(3) 15-DAY ORG. MAINT. ALLOWANCE (a) 1-5	(b) 6-20	(c) 21-50	(d) 51-100
5930-636-0414	SWITCH, TOGGLE: 9711; 74545	1,2	*	*	2	2
5930-823-0301	SWITCH, PUSHBUTTON: 1786-C; 19557	1,2	*	*	2	2
5930-832-8193	THERMOSTAT: T473-B1002; 40931	2	*	*	2	2
5935-064-5732	CONNECTOR, RECEPTACLE, ELECTRICAL U-238A/G: In pwr ent box	1,2	*	*	2	2
5935-259-3313	CONNECTOR, RECEPTACLE, ELECTRICAL: 7210B; 74545	1,2	*	*	2	2
5935-578-3848	CONNECTOR, RECEPTACLE, ELECTRICAL: 5262; 74545	1,2	2	2	3	6
5935-796-1731	SWITCH AND RECEPTACLE ASSEMBLY: 5225; 75582	1,2	*	*	2	2
5935-874-3424	CONNECTOR, RECEPTACLE, ELECTRICAL: 5261; 74545	1,2	*	*	*	2
5945-615-7738	RELAY: F/security deject and emergency lights; PR11AY; 77342	1,2	*	*	*	2
5950-892-8208	TRANSFORMER, CURRENT: Mtd in pwr dist box; 3CT-11B; 93993	1,2	*	*	2	2
6210-552-9546	LIGHT, INDICATOR: Clear lens; 125-408-1137; 72619	1,2	*	*	*	2
6240-143-7418	LAMP, INCANDESCENT: Blue; 25A/B; 24455	1,2	*	*	2	2
6240-152-2996	LAMP, FLUORESCENT: F20T12/CW; 24455	1,2	2	2	6	11
6240-155-7836	LAMP, INCANDESCENT: MS25237-327; 81349	1,2	*	*	2	2
6240-179-1814	LAMP, GLOW: NE-45; 81349	1,2	2	2	4	8
6240-223-9100	LAMP, GLOW: NE-51; 81349	1,2	2	2	4	7
6240-044-6914	LAMP, INCANDESCENT: 1683; 24455	1,2	*	*	2	2
6250-109-1091	LAMPHOLDER: 50715; 77166	1,2	*	*	*	2
6250-174-4684	LAMPHOLDER: Incl starter socket; 78X736; 24455	1,2	*	*	2	2
6250-299-6093	LAMPHOLDER: 78X491; 24455	1,2	*	*	2	2
6250-752-2476	LAMPHOLDER: 4-11; 72619	1,2	*	*	2	2
6625-682-4723	VOLTMETER: MR36W150ACVVR; 81349	1,2	*	*	*	2
6625-752-8464	AMMETER: MR36W100ACVVR; 81349	1,2	*	*	*	2
6625-841-6641	METER, FREQUENCY: 31-FHXX; 31356	1,2	*	*	*	2
6685-911-6344	THERMOSTAT: T473-B1036; 40931	1	*	*	2	2
	LAMP, GLOW: NE-34; 81349	1,2	*	*	2	2
	LAMP, INCANDESCENT: Red; 15A15/R; 24455	1,2	*	*	2	2
	BALLAST: F/fluorescent; 89G457D; 24455	1,2	*	2	2	3

SECTION II. PRESCRIBED LOAD ALLOWANCE (CONTINUED)

(1) FEDERAL STOCK NUMBER	(2) DESCRIPTION	USABLE ON CODE	(3) 15-DAY ORG. MAINT. ALLOWANCE (a) 1-5	(b) 6-20	(c) 21-50	(d) 51-100
	SIGNAL GROUP					
5915-942-8460	FILTER: JW17-690; 05571	1,2	2	2	6	11
5930-971-5621	SWITCH, ROTARY: On black patch panel; PS-119; 71590	1,2	*	*	2	2
5935-224-4213	JACK, TELEPHONE JJ-024: Mtd in red and black patch panels	1,2	2	2	4	7
5935-237-2524	JACK TELEPHONE: 248A; 94156	1,2	*	*	2	2
5935-617-9945	JACK, TELEPHONE JJ-019: Mtd in red and black patch panels	1,2	2	2	3	6
5940-223-5293	POST, BINDING U-106/U	1,2	2	2	3	6

SECTION III. REPAIR PARTS FOR ORGANIZATIONAL MAINTENANCE

(1) SMR CODE / INDEX NO.	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION — Reference Number & Mfr Code	USABLE ON CODE	(4) UNIT OF ISSUE	(5) QTY INC IN UNIT PACK	(6) QTY INC IN UNIT	(7) 15-DAY ORGANIZATIONAL MAINTENANCE ALW (a) 1-5	(b) 6-20	(c) 21-50	(d) 51-100	(8) ILLUSTRATIONS (a) FIG NO.	(b) ITEM NO. OR REFERENCE DESIGNATION
--O-R A001	5815-766-5080	TELETYPEWRITER TERMINAL AN/MGC-22: (This item is nonexpendable.) SEMI-TRAILER VAN, ELECTRONIC EQUIPMENT V-317/MGC NOTE: Usable on code 1 refers to V-317/MGC fabricated by Tobyhanna Army Depot, QR-66-43; 2 refers to V-317/MGC manufactured by Electro-Magnetic, Inc., contract DA-36-039-AMC-05599(E).										
P-O A023	5110-293-2339	AXE, SINGLE BIT: SC-C-539451; 80063	1,2	ea		2	*	*	*	*	6-1	
P-O A024	4210-926-4136	BASKET, WASTEPAPER: SC-D-539454; 80063	1,2	ea		4	*	*	*	*	6-1	
P-O A029	4210-595-4085	BRACKET: F/fire extinguisher; SC-C-539468; 80063	1,2	ea		1	*	*	*	*		
P-C A030	7920-291-8305	BROOM: 1820; 45092	1,2	ea		1	*	*	*	*		
P-C A031	7920-178-8315	BRUSH, DUSTING, BENCH: SC-C-539469; 80063	1,2	ea		1	*	*	*	*		
P-O A033	6145-752-2473	CABLE, POWER, ELECTRICAL WT-26/U: F/power cable assys	1,2	ft		345	*	*	*	*		
P-O A034	6145-577-8480	CABLE, TELEPHONE UM-130, A/G: F/26 pair cable assys	1,2	ft		530	*	*	*	*		
P-O A037	5995-889-1500	CABLE ASSEMBLY, POWER ELECTRICAL CX-7453/U: (100 ft lg)	1,2	ea		3	*	*	2	2		
P-O A039	5995-879-9676	CABLE ASSEMBLY, TELEPHONE: Approx 42 in lg; 3 spade lugs one end, 1 four pin Sunbank A06-184P-42 connector other end; SC-C-508812; 80063	1,2	ea		5	*	*	2	2		
P-O A040	5995-879-9688	CABLE ASSEMBLY, POWER ELECTRICAL: Approx 60 in lg; 1 UP-121/M connector one end, 1 three pin Sunbank A06-14S7$-42 connector other end; SC-C-508805; 80063	1,2	ea		5	*	*	2	2		
P-O A041	5995-879-9678	CABLE ASSEMBLY, TELEPHONE: Approx 40 in lg; 3 spade lugs one end, 1 four pin Sunbank A06-14S7PX-42 connector other end; SC-C-512367; 80063	1,2	ea		5	*	*	2	2		
P-C A043	5995-926-0785	CABLE ASSEMBLY, TELEPHONE: Approx 1 ft lg; PJ-047B plug each end; SC-C-506302-GP1; 80063	1,2	ea		6	*	*	2	2		
P-C A044	5995-926-0790	CABLE ASSEMBLY, TELEPHONE: Approx 1 ft lg; PJ-047R plug each end; SC-C-506303-GP1; 80063	1,2	ea		6	*	*	2	2		
P-C A045	5995-926-0786	CABLE ASSEMBLY, TELEPHONE: Approx 1 ft 6 in lg; PJ-047B plug each end; SC-C-506302-GP2; 80063	1,2	ea		8	*	*	2	2		
P-C A046	5995-926-0792	CABLE ASSEMBLY, TELEPHONE: Approx 1 ft 6 in lg; PJ-047R plug each end; SC-C-506303-GP2; 80063	1,2	ea		8	*	*	2	2		
P-C A047	5995-926-0783	CABLE ASSEMBLY, TELEPHONE: Approx 1 ft 6 in lg; PJ-039R plug each end; SC-C-506304-GP1; 80063	1,2	ea		2	*	*	*	2		
P-C A048	5995-926-0787	CABLE ASSEMBLY, TELEPHONE: Approx 2 ft lg; PJ-047B plug each end; SC-C-506302-GP3; 80063	1,2	ea		8	*	*	2	2		
P-C A049	5995-926-0791	CABLE ASSEMBLY, TELEPHONE: Approx 2 ft lg; PJ-047R plug each end; SC-C-506303-GP3; 80063	1,2	ea		8	*	*	2	2		
P-C A050	5995-926-0784	CABLE ASSEMBLY, TELEPHONE: Approx 2 ft lg; PJ-309R plug each end; SC-C-506304-GP2; 80063	1,2	ea		2	*	*	*	2		
P-C A051	5925-926-0863	CABLE ASSEMBLY, TELEPHONE: Approx 2 ft 6 in lg; PJ-047B plug each end; SC-C-506302-GP4; 80063	1,2	ea		2	*	*	*	2		
P-C A052	5995-926-0789	CABLE ASSEMBLY, TELEPHONE: Approx 2 ft 6 in lg; PJ-047R plug each end; SC-C-506303-GP4; 80063	1,2	ea		2	*	*	*	2		
P-C A053	5995-832-7769	CABLE ASSEMBLY, TELEPHONE: Approx 18 in lg; PJ-047R plug one end, skinned and tinned other end; SC-C-506863; 80063	1,2	ea		1	*	*	*	*		
P-C A054	5995-832-7770	CABLE ASSEMBLY, TELEPHONE: Approx 18 in lg; PJ-047B one end, skinned and tinned other end; SC-C-506862; 80063	1,2	ea		1	*	*	*	*		
P-C A055	5995-926-0782	CABLE ASSEMBLY, TELEPHONE: Approx 4 ft lg; F/TA-312/PT; SC-C-506310-GP1; 80063	1,2	ea		1	*	*	*	*		
P-O A056	5940-254-2244	CAP, ELECTRICAL: F/U-106/U; SC-C-76202-1; 80063	1,2	ea		110	2	2	3	6	2-6	

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P-O-R A063	6645-224-8629	CLOCK, AIRCRAFT, MECHANICAL: P-642, type A; 11755	1,2	ea		1	*	*	*	*	1-1	
P-O A065	5935-064-5731	CONNECTOR, PLUG, ELECTRICAL U-237A/G: F/power cable assys	1,2	ea		9	*	*	2	2		
P-O-R A066	5935-045-9832	CONNECTOR, RECEPTACLE, ELECTRICAL U-187A/G: 26 pair cable conn	1,2	ea		2	*	*	*	2	2-3	
F-C A071	7920-872-6062	COVER, BROOM: SC-B-379217; 80063	1,2	ea		1	*	*	*	*		
P-O A072	5975-879-7234	COVER, ELECTRICAL OUTLET: Mtd in pwr ent box; 5211; 74545	1,2	ea		1	*	*	*	*	2-3	
P-O A073	7230-921-6712	DOOR FOLDING: Starline "V"; 28996	1,2	ea		1	*	*	*	*	6-1	
P-C A077	5120-293-2696	EXTRACTOR, ELECTRON TUBE: 7113; 95344	1,2	ea		1	*	*	*	*		
P-C A078	5120-293-2692	EXTRACTOR, ELECTRON TUBE: TP-13-16; 73917	1,2	ea		1	*	*	*	*		
P-C A092	5920-356-2188	FUSE, CARTRIDGE: Red patch panel; F02A250V1-8AS; 81349	1,2	ea		16	9	30	70	136	3-8, 6-3	F4 thru F19
P-C A093	5920-280-4960	FUSE, CARTRIDGE: F02A250V2AS; 81349	1,2	ea		1	2	2	6	11	6-2	F2
P-C A094	5920-356-2193	FUSE, CARTRIDGE: F02A250V1-2AS; 81349	1,2	ea		1	2	2	6	11	6-2	F1
P-C A095	5920-060-2424	FUSE, CARTRIDGE: F02A250VSAS; 81349	1,2	ea		1	2	2	6	11	6-2	F3
P-O A099	5120-776-9917	GRIP, CABLE, JAW: EQA6-8P; 95344	1,2	ea		6	*	*	2	2		
P-O A100	5120-776-9918	GRIP, CABLE JAW: EQA-26S; 95344	1,2	ea		4	*	*	*	2		
P-C A101	5120-608-0109	HAMMER, HAND: SC-C-539505; 80063	1,2	ea		1	*	*	*	*		
P-O A103	5815-126-8140	HOLDER, TAPE GUIDE: SC-B-31336; 80063	1,2	ea		13	*	*	*	2		
P-O A104	4140-792-8395	IMPELLER, FAN: F/exhaust fan; 23396-02; 82877	1,2	ea		1	*	*	*	*		
P-O A107	5935-813-0789	JACK, TELEPHONE JJ-075: F/TA-312/PT	1,2	ea		1	*	*	*	*		
P-C A118	6240-246-5052	LAMP, INCANDESCENT: 100A/RS; 24455	1,2	ea		1	*	*	2	2		
P-C A126	6230-729-9614	LANTERN, ELECTRIC: SC-D-539491; 80063	1,2	ea		1	*	*	*	2		
P-C A127	5410-752-2525	LEAD, ELECTRICAL: Ground strap; SM-B-352166; 80063	1,2	ea		2	*	*	*	2		
P-O A128	5310-926-5451	LEVEL, BENCH: Mtd on van to level it when setting up for operation; SC-B-506635; 80063	1,2	ea		2	*	*	*	2		
P-C A129	6230-239-3518	LIGHT, EXTENSION: SC-C-539496; 80063	1,2	ea		1	*	*	*	2		
P-O A138	6105-792-8384	MOTOR, ALTERNATING CURRENT: 23396-01; 82877	1,2	ea		1	*	*	*	*		
P-O A142	8130-656-1090	REEL, CABLE RC-435/U	1,2	ea		5	*	*	2	2		
P-O A145	5410-783-6250	REPAIR KIT, ELECTRICAL EQUIPMENT SHELTER MK-680/G: To repair punctures in van skin (Note: To be requisitioned for immediate use only, order direct from depot stock.)	1,2	ea			*	*	*	*		
P-O A147	6210-757-9694	RETAINER, LAMP, FLUORESCENT: P-40; 19634	1,2	ea		36	*	2	2	3		
P-C A150	5975-224-5260	ROD, GROUND MX-148/G	1,2	ea		2	*	*	2	2		
P-O A156	6210-921-6682	SHIELD, LIGHT: F/fluorescent; SC-C-539466; 80063	1,2	ea		18	*	2	2	3		

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P-C A058	6250-299-2881	STARTER, FLUORESCENT: FS-2; 71183	1,2	ea		18	2	2	3	6		
P-O A172	5340-930-1476	VIEWER, DOOR: Mtd in door; CB101; 23404	1,2	ea		1	*	*	*	*		
		POWER GROUP										
P-O A022	6625-752-8464	AMMETER: MR36W100ACVVR; 81349	1,2	ea		3	*	*	*	2	3-1 3-2 3-3	M7 M8 M9
P-O A025		BALLAST: F/fluorescent; 89G457D; 24455	1,2	ea		18	*	2	2	3	6-2	RT1 thru RT18
P-O A028	6350-193-2776	BELL, ELECTRICAL: 156 (24 vac); 19557	1,2	ea		1	*	*	*	*	6-2	DS20
P-O A032	6350-921-6889	BUZZER: 115, size 4 (24 vac); 19557	1,2	ea		1	*	*	*	*	6-2	DS21
P-O A056	5925-682-1061	CIRCUIT BREAKER: QO-115; 90211	1,2	ea		27	*	2	2	3	6-2	CB2 thru CB11, CB14 thru CB22, CB25 thru CB29, CB31, CB32, CB33
P-O A059	5925-523-5764	CIRCUIT BREAKER: QO-120; 90211	1,2	ea		1	*	*	*	*	6-2	CB30
P-O A060	5925-823-2485	CIRCUIT BREAKER: QO-150; 90211	1,2	ea		2	*	*	*	2	6-2	CB13, CB24
P-O A061	5925-089-9928	CIRCUIT BREAKER: Q1-2100; 90211	1,2	ea		3	*	*	2	2	6-2	CB1, CB12, CB23
P-O A067	5935-064-5732	CONNECTOR, RECEPTACLE, ELECTRICAL U-238A/G: In pwr ent box	1,2	ea		3	*	*	2	2	2-3, 6-2	J46, J47, J48
P-O A068	5935-259-3313	CONNECTOR, RECEPTACLE, ELECTRICAL: 7210B; 74545	1,2	ea		4	*	*	2	2	6-2	J7 thru J10
P-O A069	5935-874-3424	CONNECTOR, RECEPTACLE, ELECTRICAL: 5261; 74545	1,2	ea		2	*	*	*	2	6-2	J38, J39
P-O A070	5935-578-3848	CONNECTOR, RECEPTACLE, ELECTRICAL: 5262; 74545	1,2	ea		33	2	2	3	6	6-2	J1 thru J6, J11 thru J37
P-O A079	5915-999-2757	FILTER: FSR-111E; 81831	1,2	ea		3	*	*	*	2	6-2	FL19, FL20, FL21
P-O A081	5910-553-6096	FILTER: F/fluorescent; SC-C-33033-4; 80063	1,2	ea		18	*	2	2	3	6-2	FL1 thru FL18
P-O A096	5920-682-0369	FUSEHOLDER: F/emergency lighting; 344.024; 75915	1,2	ea		1	*	*	*	*	6-2	XF3
P-O A097	5920-878-5191	FUSEHOLDER: F/exhaust blower, pwr dist panel; 344.125; 71915	1,2	ea		2	*	*	*	*	6-2	XF1, XF2
P-O A098	5920-943-2608	FUSEHOLDER: F/red patch panel; 340146; 71915	1,2	ea		16	*	*	2	2	3-6, 6-3	XF4 thru XF19
P-C A109	6240-152-2996	LAMP, FLUORESCENT: F20T12/CW; 24455;	1,2	ea		18	2	2	6	11	6-2	DS1 thru DS18
P-C A110		LAMP, GLOW: NE-34; 81349	1,2	ea		3	*	*	2	2	6-2	DS23, DS24, DS25
P-C A111	6240-179-1814	LAMP, GLOW: NE-45; 81349	1,2	ea		30	2	2	4	8	6-2	DS26 thru DS55
P-C A112	6240-223-9100	LAMP, GLOW: NE-51; 81349	1,2	ea		13	2	2	4	7	6-2	DS19, DS57 thru DS68
P-C A117	6240-143-7418	LAMP, INCANDESCENT: Blue; 25A/B; 24455	1,2	ea		1	*	*	2	2	6-2	DS69
P-C A119	6240-155-7836	LAMP, INCANDESCENT: MS25237-327; 81349	1,2	ea		1	*	*	2	2	6-2	DS56
P-C A120		LAMP, INCANDESCENT: Red; 15A15/R; 24455	1,2	ea		1	*	*	2	2	6-2	DS70
P-O A121	6240-044-6914	LAMP, INCANDESCENT: 1683; 24455	1,2	ea		3	*	*	2	2	6-2	DS71, DS72, DS73

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P-0 A122	6250-109-1091	LAMPHOLDER: 50715; 77166	1,2	ea		5	*	*	*		6-2	XDS23, XDS24, XDS25, XDS69, XDS70
P-0 A123	6250-174-4684	LAMPHOLDER: Incl starter socket; 78X736; 24455	1,2	ea		28	*	*	2	2	6-2	XDS1 thru XDS16
P-0 A124	6250-[illegible]-4693	LAMPHOLDER: 78X491; 24455	1,2	ea		16	*	*	2	2	6-2	XDS19 thru XDS36
P-0 A125	6250-752-2476	LAMPHOLDER: 4-11; 72619	1,2	ea		50	*	*	2	2	6-2	XDS26 thru XDS55
P-0 A130	6210-558-9546	LIGHT, INDICATOR: Clear lens; 125-408-1137; 72619	1,2	ea		8	*	*	*	2	6-2	XDS57 thru XDS64
P-0 A131	6210-553-1102	LIGHT, INDICATOR: Red lens; f/emergency lighting; 101-5030-971; 72619	1,2	ea		1	*	*	*	*	6-2	XDS56
P-0 A132	6210-892-5716	LIGHT, INDICATOR: 95408-931; 72619	1,2	ea		1	*	*	*	*	6-2	XDS19
P-0 A133	6210-926-1229	LIGHT, INDICATOR: Clear lens; 125-1308-1137; 72619	1,2	ea		4	*	*	*	*	6-2	XDS65 thru XDS68
P-0 A135	6625-841-6641	METER, FREQUENCY: 31-FHXX; 31356	1,2	ea		3	*	*	*	2	6-2	M1, M2, M3
P-0 A144	5945-615-7738	RELAY: F/security deject and emergency lights; PR11AY; 77342	1,2	ea		2	*	*	*	2	6-2	K1, K2
P-0 A159	5930-823-0301	SWITCH, PUSHBUTTON: 1786-C; 19557	1,2	ea		2	*	*	2	2	6-2	S1, S2
P-0 A161	5930-241-8954	SWITCH, SENSITIVE: Opens fluorescent light ckts when doors are opened; BZ-2RQ1-A2; 91929	1,2	ea		3	*	*	2	2	6-2	S3, S4, S26
P-0 A162	5930-636-4014	SWITCH, TOGGLE: 9711; 74545	1,2	ea		4	*	*	2	2	6-2	S5 thru S8
P-0 A163	5930-228-0204	SWITCH, TOGGLE: F/TH-5/TG or TH-22/TG on-off; 86994AF; 04009	1,2	ea		10	*	*	2	2	6-2	S11, S13 thru S21
P-0 A164		SWITCH, TOGGLE: F/emergency lights; MS35058-16; 81349	1,2	ea		1	*	*	*	*	6-2	S2
P-0 A165	5935-796-1731	SWITCH, AND RECEPTACLE ASSEMBLY: 5225; 75582	1,2	ea		6	*	*	2	2	6-2	J40 thru J45
P-0 A167	6685-911-6344	THERMOSTAT: T473-B1036; 40931	1	ea		2	*	*	2	2	6-2	S9, S10
P-0 A168	5930-832-8193	THERMOSTAT: T473-B1002; 40931	2	ea		2	*	*	2	2	6-2	S9, S10
P-0 A170	5950-892-8208	TRANSFORMER, CURRENT: Mtd in pwr dist box; 3CT-11B; 93993	1,2	ea		3	*	*	2	2	6-2	T1, T2, T3
P-0 A171	5950-942-8457	TRANSFORMER, STEP-DOWN: F/bell and buzzer operation; 320-0B; 94227	1,2	ea		1	*	*	*	*	6-2	T4
P-0 A173	6625-682-4723	VOLTMETER: MR36W150ACVVR; 81349	1,2	ea		3	*	*	*	2	6-2	M4, M5, M6
		SIGNAL GROUP										
P-0 A080	5915-942-8460	FILTER: JW17-690; 05571	1,2	ea		104	-	2	6	11	6-3	FL1 thru FL104
P-0 A105	5935-617-9945	JACK, TELEPHONE JJ-019: Mtd in red and black patch panels	1,2	ea		114	2	2	3	6	3-5, 3-6, 6-3	J48, J49, J53 thru J70, J77 thru J94, J103 thru J114, J142 thru J189, J199 thru J214
P-0 A106	5935-224-4213	JACK, TELEPHONE JJ-024: Mtd in red and black patch panels	1,2	ea		143	2	2	4	7	3-5, 3-6, 6-3	J1 thru J47, J50, J51, J52, J74, J75, J76, J98 thru J102, J118 thru J141, J190 thru J198, J215 thru J266

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P-O A108	5935-237-2524	JACK, TELEPHONE: 248A; 94156	1,2	ea		9	*	*	2	2	6-3	J71, J72, J73, J95, J96, J97, J115, J116, J117
P-O A136		MICROAMMETER: MR26W1H1DCUAR; 81349	1,2	ea		1	*	*	*	*	6-3	M2
P-O A137	6625-682-4665	MILLIAMMETER: MR26W1H1DCMAR; 81349	1,2	ea		2	*	*	*	*	6-3	M1, M4
P-O A141	5940-223-5293	POST, BINDING U-106/U	1,2	ea		110	2	2	3	6	6-3	E1 thru E110
P-O A149	5805-503-1145	RINGER, TELEPHONE EZ-23/PT	1,2	ea		1	*	*	*	*	6-3	DS1
P-O A160	5930-971-5621	SWITCH, ROTARY: On black patch panel; PS-119; 71590	1,2	ea		8	*	*	2	2	6-3	S2 thru S9

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--O-R A001	5815-766-5080	TELETYPEWRITER TERMINAL AN/MGC-22: (This item is nonexpendable.) SEMI-TRAILER VAN, ELECTRONIC EQUIPMENT V-317/MGC NOTE: Usable on code 1 refers to V-317/MGC fabricated by Tobyhanna Army Depot, QR-66-43; 2 refers to V-317/MGC manufactured by Electro-Magnetic, Ind, contract DA-36-039-AMC-05599(E)														
P-O A023	5110-293-2339	AXE, SINGLE BIT: SC-C-539451; 80063	1,2	ea		2	*	*	2	*	*	2	10	20	6-1	
P-O A024	4210-926-4136	BASKET, WASTEPAPER: SC-D-539454; 80063	1,2	ea		4	*	*	2	*	*	2	10	12	6-1	
P-O A029	4210-595-4085	BRACKET: F/fire extinguisher; SC-C-539468; 80063	1,2	ea		-	*	*	*	*	*	*	4	5		
P-C A030	7920-291-8305	BROOM: 1820; 45092	1,2	ea		1	*	*	*	*	*	*	4	3		
P-C A031	7920-178-8315	BRUSH, DUSTING, BENCH: SC-C-539469; 80063	1,2	ea		1	*	*	*	*	*	*	4	3		
P-O A033	6145-752-2473	CABLE POWER, ELECTRICAL WT-26/U: F/power cable assys	1,2	ft		345	*	*	*	*	*	*	1095	3450		
P-O A034	6145-577-8480	CABLE, TELEPHONE UM-130, A/G: F/26 pair cable assys	1,2	ft		530	*	*	*	*	*	*	1614	5300		
P-O A037	5995-889-1500	CABLE ASSEMBLY, POWER ELECTRICAL CX-7453/U: (100 ft lg)	1,2	ea		3	2	2	2	*	2	2	18	18		
P-O A039	5995-879-9676	CABLE ASSEMBLY, TELEPHONE: Approx 42 in lg; 3 spade lugs one end, 1 four pin Sunbank A06-184P-42 connector other end; SC-C-508812; 80063	1,2	ea		5	2	2	2	2	2	2	27	30		
P-O A040	5995-879-9688	CABLE ASSEMBLY POWER ELECTRICAL: approx 60 in lg; 1 UP-121/M connector one end, 1 three pin Sunbank A06-14S7S-42 connector other end; SC-C-508805; 80063	1,2	ea		5	2	2	2	2	2	2	27	30		
P-O A041	5995-879-9678	CABLE ASSEMBLY, TELEPHONE: Approx 40 in lg; 3 spade lugs one end, 1 four pin Sunbank A06-14S7PX-42 connector other end; SC-C-512367; 80063	1,2	ea		5	2	2	2	2	2	2	27	30		
P-C A043	5995-926-0785	CABLE ASSEMBLY, TELEPHONE: Approx 1 ft lg; PJ-047B plug each end; SC-C-506302-GP1; 80063	1,2	ea		6	2	2	3	2	2	2	33	36		
P-C A044	5995-926-0790	CABLE ASSEMBLY, TELEPHONE: Approx 1 ft lg; PJ-047R plug each end; SC-C-506303-GP1; 80063	1,2	ea		6	2	2	3	2	2	2	33	36		
P-C A045	5995-926-0786	CABLE ASSEMBLY, TELEPHONE: Approx 1 ft 6 in lg; PJ-047B plug each end; SC-C-506302-GP2; 80063	1,2	ea		8	2	2	3	2	2	2	40	48		
P-C A046	5995-926-0792	CABLE ASSEMBLY, TELEPHONE: Approx 1 ft 6 in lg; PJ-047R plug each end; SC-C-506303-GP2; 80063	1,2	ea		8	2	2	3	2	2	2	40	48		
P-C A047	5995-926-0783	CABLE ASSEMBLY, TELEPHONE: Approx 1 ft 6 in lg; PJ-039R plug each end; SC-C-506304-GP1; 80063	1,2	ea		2	*	2	2	*	2	2	13	12		
P-C A048	5995-926-0787	CABLE ASSEMBLY, TELEPHONE: Approx 2 ft lg; PJ-047B plug each end; SC-C-506302-GP3; 80063	1,2	ea		8	2	2	3	2	2	2	40	48		
P-C A049	5995-926-0791	CABLE ASSEMBLY, TELEPHONE: Approx 2 ft lg; PJ-047R plug each end; SC-C-506303-GP3; 80063	1,2	ea		8	2	2	3	2	2	2	40	48		
P-C A050	5995-926-0784	CABLE ASSEMBLY, TELEPHONE: Approx 2 ft lg; PJ-309R plug each end; SC-C-506304-GP2; 80063	1,2	ea		2	*	2	2	*	2	2	13	12		

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P-C A051	5995-926-0763	CABLE ASSEMBLY, TELEPHONE: Approx 2 ft 6 in lg; PJ-047B plug each end; SC-C-506302-GP4; 80063	1,2	ea		2	*	2	2	*	2	2	13	12		
P-C A052	5995-926-0789	CABLE ASSEMBLY, TELEPHONE: Approx 2 ft 6 in lg; PJ-047R plug each end; SC-C-506303-GP4; 80063	1,2	ea		2	*	2	2	*	2	2	13	12		
P-C A053	5995-832-7769	CABLE ASSEMBLY, TELEPHONE: Approx 18 in lg; PJ-047R plug one end, skinned and tinned other end; SC-C-506863; 80063	1,2	ea		1	*	*	2	*	*	*	8	6		
P-C A054	5995-832-7770	CABLE ASSEMBLY, TELEPHONE: Approx 18 in lg; PJ-047B one end, skinned and tinned other end; SC-C-506862; 80063	1,2	ea		1	*	*	2	*	*	*	8	6		
P-C A055	5995-926-0782	CABLE ASSEMBLY, TELEPHONE: Approx 4 ft lg; F/TA-312/PT; SC-C-506310-GP1; 80063	1,2	ea		1	*	*	2	*	*	*	8	6		
P-C A056	5940-254-2244	CAP, ELECTRICAL: F/U-106/U; SC-C-76202-1; 80063	1,2	ea		110	2	6	11	2	2	3	130	550	2-6	
P-C-R A063	6645-224-8629	CLOCK, AIRCRAFT, MECHANICAL: P-642, type A; 11755	1,2	ea		1	*	*	*	*	*	*	4	5	1-1	
P-F-R A064		CONNECTOR, PLUG, ELECTRICAL U-185B/G: F/26 pair cable assys	1,2	ea		6	2	2	3	2	2	2	33	36		
P-C A065	5935-064-5731	CONNECTOR, PLUG, ELECTRICAL U-237A/G: F/power cable assys	1,2	ea		9	2	2	3	2	2	2	40	54		
P-C-R A066	5935-045-9832	CONNECTOR, RECEPTACLE, ELECTRICAL U-187A/G: 26 pair cable conn	1,2	ea		2	*	2	2	*	2	2	13	12	2-3	
P-C A071	7920-872-6062	COVER, BROOM: SC-B-379217; 80063	1,2	ea		1	*	*	*	*	*	*	5	2		
P-C A072	5975-879-7234	COVER, ELECTRICAL OUTLET: Mtd in pwr ent box; 5211; 74545	1,2	ea		1	*	*	*	*	*	*	5	2	2-3	
P-C A073	7230-921-6712	DOOR FOLDING: Starline "V"; 28996	1,2	ea		1	*	*	*	*	*	*	4	4	6-1	
P-C A077	5120-293-2696	EXTRACTOR, ELECTRON TUBE: 7113; 95344	1,2	ea		1	*	*	*	*	*	*	4	5		
P-C A078	5120-293-2692	EXTRACTOR, ELECTRON TUBE: TP-13-16; 73917	1,2	ea		1	*	*	*	*	*	*	4	5		
P-C A092	5920-356-2188	FUSE, CARTRIDGE: Red patch panel; F02A250V1-8AS; 81349	1,2	ea		16	60	134	263	34	50	66	3162	1600	3-6, 6-3	F4 thru F19
P-C A093	5920-280-4960	FUSE, CARTRIDGE: F02A250V2AS; 81349	1,2	ea		1	4	11	20	3	4	5	242	100	6-2	F2
P-C A094	5920-356-2193	FUSE, CARTRIDGE: F02A250V1-2AS; 81349	1,2	ea		1	4	11	20	3	4	5	242	100	6-2	F1
P-C A095	5920-060-2424	FUSE, CARTRIDGE: F02A250VSAS; 81349	1,2	ea		1	4	11	20	3	4	5	242	100	6-2	F3
P-C A099	5120-776-9917	GRIP, CABLE, JAW: EQA6-8P; 95344	1,2	ea		6	2	2	2	*	2	2	19	60		
P-C A100	5120-776-9918	GRIP, CABLE JAW: EQA-26S; 95344	1,2	ea		4	2	2	2	*	2	2	16	40		
P-C A101	5120-608-0109	HAMMER, HAND: SC-C-539505; 80063	1,2	ea		1	*	*	*	*	*	*	5	5		
P-C A103	5815-126-8140	HOLDER, TAPE GUIDE: SC-B-31336; 80063	1,2	ea		13	*	2	2	*	2	2	13	65		
P-C A104	4140-792-8395	IMPELLER, FAN: F/exhaust fan; 23396-02; 82877	1,2	ea		1	*	*	*	*	*	*	4	3		
P-C A107	5935-813-0789	JACK, TELEPHONE JJ-075: F/TA-312/PT	1,2	ea		1	*	*	*	*	*	*	4	3		
P-C A118	6240-246-5052	LAMP, INCANDESCENT: 100A/RS; 24455	1,2	ea		1	2	2	2	*	2	2	19	50		

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P-C A126	6230-729-9614	LANTERN, ELECTRIC: SC-D-539491; 80063	[illegible]	ea		1	*	[illegible]	2	*	[illegible]	[illegible]	[illegible]	[illegible]		
P-C A127	5410-752-2525	LEAD, ELECTRIC: Ground strap; SM-B-352166; 80063	[illegible]	ea		1	*	*	[illegible]	*	*	[illegible]	[illegible]	[illegible]		
P-O A128	5310-926-5451	LEVEL, BENCH: Mtd on van to level it when setting up for operation; SC-B-506635; 80063	[illegible]	ea		1	[illegible]	[illegible]	[illegible]	*	2	2	[illegible]	[illegible]		
P-C A129	6230-239-3518	LIGHT, EXTENSION: SC-C-539496; 80063	1,2	ea		1	*	2	[illegible]	*	2	[illegible]	[illegible]	[illegible]		
P-H A134	5410-973-2936	MAINTENANCE KIT, ELECTRONIC EQUIPMENT SHELTER MK-679/G: To repair punctures in van skin (Note: To be requisitioned for immediate use only, order direct from depot stock.)	[illegible]							*	*	*				
P-O A138	6105-792-8384	MOTOR, ALTERNATING CURRENT: 23396-01; 82877	[illegible]	ea		1	*	*	[illegible]	*	*	*	[illegible]	3		
P-O A142	8130-656-1090	REEL, CABLE RC-435/U	1,2	ea		5	[illegible]	[illegible]	[illegible]	*	[illegible]	[illegible]	[illegible]	[illegible]		
P-F A146	5410-771-3354	REPAIR KIT, ELECTRICAL EQUIPMENT SHELTER MK-681/G: To repair punctures in van skin; (Note: To be requisitioned for immediate use only, order direct from depot stock.)	1,2	[illegible]			*	*	*							
P-O A147	6210-757-9694	RETAINER, LAMP, FLUORESCENT: P-40; 19634	[illegible]	ea		30	[illegible]	[illegible]	5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
P-C A150	5975-224-526[illegible]	ROD, GROUND MX-148/G	[illegible]	ea		[illegible]	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
P-O A156	6210-921-6682	SHIELD, LIGHT: F/fluorescent; SC-C-539466; 80063	[illegible]	ea		18	2	[illegible]	5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
P-C A158	6250-299-2884	STARTER, FLUORESCENT: FS-2; 71183	[illegible]	ea		15	2	[illegible]	11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
P-O A172	5340-930-1476	VIEWER, DOOR: Mtd in door; CB101; 23404	[illegible]	ea		[illegible]	*	*	*	*	*	*	4	5		
		POWER GROUP														
P-O AC22	6625-752-8464	AMMETER: MR36W100ACVVR; 81349	[illegible]	ea		[illegible]	*	[illegible]	[illegible]	*	[illegible]	[illegible]	[illegible]	[illegible]	3-1 3-2 3-3	M7 M8 M9
P-O A025		BALLAST: F/fluorescent; 89G457D; 24455	1,2	ea		8	2	3	5	2	2	[illegible]	59	3[illegible]	6-2	RT1 thru RT18
P-O A028	6350-193-2776	BELL, ELECTRICAL: 156 (24 vac); 19557	[illegible]	ea		1	*	*	*	*	*	*	5	[illegible]	6-2	DS20
P-O A032	6350-921-6889	BUZZER: 115, size 4 (24 vac); 19557	[illegible]	ea		1	*	*	*	*	*	*	5	[illegible]	6-2	DS21
P-O A058	5925-682-4102	CIRCUIT BREAKER: QO-115; 90211	1,2	ea		27	2	[illegible]	8	2	[illegible]	[illegible]	[illegible]	[illegible]	6-2	CB2 thru CB11, CB14 thru CB22, CB25 thru CB29, CB31, CB32, CB33
P-O A059	5925-523-5764	CIRCUIT BREAKER: QO-120; 90211	[illegible]	ea		1	*	*	2	*	*	*	[illegible]	[illegible]	6-2	CB30
P-O A060	5925-823-2485	CIRCUIT BREAKER: QO-150; 90211	[illegible]	ea		2	*	[illegible]	2	*	2	2	13	[illegible]	6-2	CB13, CB24
P-O A061	5925-089-9928	CIRCUIT BREAKER: Q1-2100; 90211	1,2	ea		3	2	2	[illegible]	*	2	[illegible]	19	18	6-2	CB1, CB12, CB23
P-O A067	5935-064-5732	CONNECTOR, RECEPTACLE, ELECTRICAL U-238A/G: In pwr ent box	1,2	ea		3	2	[illegible]	2	*	2	2	[illegible]	[illegible]	2-3, 6-2	J46, J47, J48
P-O A068	5935-259-3313	CONNECTOR, RECEPTACLE, ELECTRICAL: 7210B; 74545	1,2	ea		4	2	2	[illegible]	*	[illegible]	[illegible]	19	[illegible]	6-2	J7 thru J10
P-O A069	5935-874-3424	CONNECTOR, RECEPTACLE, ELECTRICAL: 5261; 74545	[illegible]	ea		[illegible]	*	[illegible]	[illegible]	*	[illegible]	2	13	[illegible]	6-2	J38, J39

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[illegible]	5935-578-3848	CONNECTOR, RECEPTACLE, ELECTRICAL: 5262; 74545	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	11	2	2	3	130	198	6-2	J1 thru J6, J11 thru J37
[illegible]	5915-999-2757	FILTER: FSR-111E; 81831	[illegible]	[illegible]		[illegible]	*	2	2	*	2	2	43	6	6-2	FL19, FL20, FL21
[illegible]	5910-553-6096	FILTER: F/fluorescent; SC-C-33033-4; 80063	[illegible]	[illegible]		[illegible]	2	3	3	2	2	2	71	108	6-2	FL1 thru FL18
[illegible]	5920-682-0369	FUSEHOLDER: F/emergency lighting; 344.024; 75915	[illegible]	[illegible]		[illegible]	*	*	*	*	*	*	5	2	6-2	XF3
[illegible]	[illegible]	FUSEHOLDER: F/exhaust blower, pwr dist panel; 344.125; 71915	[illegible]	[illegible]		[illegible]	*	1	2	*	*	2	10	4	6-2	XF1, XF2
[illegible]	5920-943-2608	FUSEHOLDER: F/red patch panel; 340146; 71915	[illegible]	[illegible]		[illegible]	2	3	4	2	2	2	40	32	3-6, 6-3	XF4 thru XF19
[illegible]	[illegible]	LAMP, FLUORESCENT: F20T12/CW; 24455	[illegible]	[illegible]		18	4	11	21	3	4	5	242	900	6-2	DS1 thru DS18
[illegible]	[illegible]	[illegible]. GLOW: NE-34; 81349	[illegible]	[illegible]		[illegible]	2	2	2	2	2	2	27	150	6-2	DS23, DS24, DS25
[illegible]	6240-179-1814	[illegible]	[illegible]	[illegible]		[illegible]	5	9	13	2	3	4	187	1500	6-2	DS26 thru DS55
[illegible]	6240-223-9130	[illegible]. GLOW: NE-51; 81349	[illegible]	[illegible]		5	3	7	13	2	3	3	158	660	6-2	DS19, DS57 thru DS68
[illegible]	6240-143-7418	[illegible], INCANDESCENT: Blue; 25A/B; 24455	[illegible]	[illegible]		[illegible]	2	3	3	*	2	2	19	50	6-2	DS69
[illegible]	[illegible]	LAMP, INCANDESCENT: MS25237-327; 81349	[illegible]	[illegible]		[illegible]	2	2	2	*	2	2	19	50	6-2	DS56
[illegible]	[illegible]	LAMP, INCANDESCENT: [illegible] 15A15/R; 24455	[illegible]	[illegible]		[illegible]	2	[illegible]	2	2	2	2	19	50	6-2	DS70
[illegible]	[illegible]	LAMP, INCANDESCENT: 1683; 24455	[illegible]	[illegible]		3	2	3	2	*	2	2	19	150	6-2	DS71, DS72, DS73
[illegible]	6250-109-1091	LAMPHOLDER: 50715; 77166	[illegible]	[illegible]		5	*	2	2	*	2	2	43	25	6-2	XDS23, XDS24, XDS25, XDS69, XDS70
[illegible]	[illegible]	LAMPHOLDER: Incl starter socket; [illegible]	[illegible]	[illegible]		18	2	2	3	2	2	2	33	90	6-2	XDS1 thru XDS18
[illegible]	[illegible]	LAMPHOLDER: 78X491; 24455	[illegible]	[illegible]		2	2	2	3	2	2	2	33	90	6-2	XDS19 thru XDS36
[illegible]	[illegible]	LAMPHOLDER: 4-11; 72619	[illegible]	[illegible]		2	2	3	4	2	2	2	46	150	6-2	XDS26 thru XDS55
[illegible]	[illegible]	LIGHT, INDICATOR: Clear lens; 125-408-1137; 72619	[illegible]	[illegible]		6	1	2	3	*	2	2	16	24	6-2	XDS57 thru XDS64
[illegible]	6210-553-1102	LIGHT, INDICATOR: Red lens; f/emergency lighting; 101-5030-971; 72619	[illegible]	[illegible]		1	*	*	*	*	*	*	4	3	6-2	XDS56
[illegible]	[illegible]	LIGHT, INDICATOR: 95408-931; 72619	[illegible]	[illegible]		1	*	*	*	*	*	*	4	3	6-2	XDS19
[illegible]	[illegible]	LIGHT, INDICATOR: Clear lens; 125-1308-1137; 72619	[illegible]	[illegible]		[illegible]	*	*	2	*	*	2	10	12	6-2	XDS65 thru XDS68
[illegible]	[illegible]	METER, FREQUENCY: 31-FHXX; 31356	[illegible]	[illegible]		[illegible]	*	2	3	*	2	2	13	15	6-2	M1, M2, M3
[illegible]	[illegible]	RELAY: F/security deject and emergency lights; PR11AY; 77342	[illegible]	[illegible]		[illegible]	*	2	2	*	2	2	13	6	6-2	K1, K2
[illegible]	5930-823-0301	SWITCH, PUSHBUTTON: 1786-C; 19557	[illegible]	[illegible]		2	2	2	2	*	2	2	19	20	6-2	S1, S2
[illegible]	5930-241-8954	SWITCH, SENSITIVE: Opens fluorescent light ckts when doors are opened; BZ-2RQ1-A2; 91929	[illegible]	[illegible]		3	2	2	2	2	2	2	27	15	6-2	S3, S4, S26
[illegible]	5930-636-4014	SWITCH, TOGGLE: 9711; 74545	[illegible]	[illegible]		4	2	2	2	*	2	2	19	12	6-2	S5 thru S8

SECTION IV. REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (CONTINUED)

(1) SMR CODE / INDEX NO.	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION / REFERENCE NUMBER & MFR. CODE	USABLE ON CODE	(4) UNIT OF ISSUE	(5) QTY INC IN UNIT PACK	(6) QTY INC IN UNIT	(7) 30-DAY DS MAINT ALLOWANCE (a) 1-20	(b) 21-50	(c) 51-100	(8) 30-DAY GS MAINT ALLOWANCE (a) 1-20	(b) 21-50	(c) 51-100	(9) 1 YR ALW PER EQUIP CNTGCY	(10) DEPOT MAINT ALW PER 100 EQUIP	(11) ILLUSTRATIONS (a) FIG NO.	(b) ITEM NO. OR REFERENCE DESIGNATION
P-0 A163	5930-228-0204	SWITCH, TOGGLE: F/TH-5/TG or TH-22/TG on-off; 86994AF; 04009	1,2	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]	S11, S13 thru S21
P-0 A164		SWITCH, TOGGLE: F/emergency lights MS35058-16; 81349	1,2	ea		1	*	*	2	*	*	*	[illegible]		[illegible]	S2
P-0 A165	5935-796-1731	SWITCH AND RECEPTACLE ASSEMBLY: 5225; 75582	1,2	ea			2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	J40 thru J45
P-0 A167	6685-911-6344	THERMOSTAT: T473-B1036; 40931	[illegible]	ea		2	2	2	2	*	2	2	[illegible]	[illegible]	[illegible]	S9, S10
P-0 A168	5930-832-8193	THERMOSTAT: T473-B1002; 40931	2	ea		[illegible]	2	2	[illegible]	*		[illegible]	[illegible]	[illegible]	6-2	S9, [illegible]
P-0 A170	5950-892-8208	TRANSFORMER, CURRENT: Mtd in pwr dist box; 3CT-11B; 93993	1,2	ea		3	2	[illegible]	2	*	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	T1, [illegible]
P-0 A171	5950-942-8457	TRANSFORMER, STEP-DOWN: F/bell and buzzer operation; 320-0B; 94[illegible]27	[illegible]	ea		1	*	*	2	*	*	*	[illegible]	[illegible]	6-2	T4
P-0 A173	6625-682-4723	VOLTMETER: MR36W150ACVVR; 81349	1,2	ea		3	*	2	2	*	2	2	[illegible]	15	6-2	M4, M5, M6
		SIGNAL GROUP														
P-0 A080	5915-942-8460	FILTER: JW17-690; 05571	1,2	ea		[illegible]	4	11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	FL1 thru FL104
P-0 A105	5935-617-9945	JACK, TELEPHONE JJ-019: Mtd in red and black patch panels	1,2	ea		[illegible]	2	[illegible]	[illegible]	[illegible]		2	[illegible]	[illegible]	[illegible]	J48, J49, J53 thru J70, J77 thru J94, J103 thru J114, J142 thru J189, J199 thru J214
P-0 A106	5935-224-4213	JACK, TELEPHONE JJ-024: Mtd in red and black patch panels	1,2	ea		[illegible]	3	7	[illegible]	[illegible]		3	[illegible]	[illegible]	[illegible]	J1 thru J47, J50, J51, J52, J74, J75, J76, J98 thru J102, J118 thru J141, J190 thru J198, J215 thru J266
P-0 A108	5935-237-2524	JACK TELEPHONE: 248A; 94156	1,2	ea		9	2	2	2	*	[illegible]		18	[illegible]	[illegible]	J71, J72, J73, J95, J96, J97, J115, J116, J117
P-0 A136		MICROAMMETER: MR26W1H1DCUAR; 81349	1,2	ea		1	*	*	*	*	*	*	5	[illegible]	[illegible]	M2
P-0 A137	6625-682-4665	MILLIAMMETER: MR26W1H1DCMAR; 81349	1,2	ea		2	*	*	[illegible]	*	*	*		[illegible]	6-3	M1, M4
P-0 A141	5940-223-5293	POST, BINDING U-106/U	1,2	ea		110	2	6	11	[illegible]	[illegible]	3	[illegible]	[illegible]	[illegible]	E1 thru E110
P-0 A149	5805-503-1145	RINGER, TELEPHONE BZ-23/PT	1,2	ea		1	*	*	*	*	*	*	[illegible]	[illegible]	6-3	[illegible]
P-0 A160	5930-971-5621	SWITCH, ROTARY: On black patch panel; PS-119; 71590	1,2	ea		8	2	2	3	2	2	2	[illegible]	[illegible]	6-3	[illegible]

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5120-293-2692	A078
5120-293-2696	A077
5120-608-0109	A101
5120-776-9917	A099
5120-776-9918	A100
5310-926-5451	A128
5340-930-1476	A172
5410-752-2525	A127
5410-771-3354	A146
5410-783-6250	A145
5410-973-2936	A134
5805-503-1145	A149
5815-126-8140	A103
5815-766-5080	A001
5910-553-6096	A081
5915-942-8460	A080
5915-999-2757	A079
5920-060-2424	A095
5920-280-4960	A093
5920-356-2188	A092
5920-356-2193	A094
5920-682-0369	A096
5920-878-5191	A097
5920-943-2608	A098
5925-089-9928	A061
5925-523-5764	A059
5925-682-4102	A058
5925-823-2485	A060
5925-926-0863	A051
5930-228-0204	A163
5930-241-8954	A161
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5930-832-8193	A168
5930-971-5621	A160
5935-045-9832	A066
5935-064-5731	A065
5935-064-5732	A067
5935-224-4213	A106
5935-237-2524	A108
5935-259-3313	A068
5935-578-3848	A070
5935-617-9945	A105
5935-796-1731	A165
5935-813-0789	A107
5935-874-3424	A069
5940-223-5293	A141
5940-254-2244	A056
5945-615-7738	A144
5950-892-8208	A170
5950-942-8457	A171
5975-224-5260	A150
5975-879-7234	A072
5995-832-7769	A053
5995-832-7770	A054
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5995-879-9678	A041
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SECTION V. INDEX-FEDERAL STOCK NUMBER CROSS REFERENCE TO INDEX NUMBER (CONTINUED)

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7230-921-6712	A073				
7920-178-8315	A031				
7920-291-8305	A030				
7920-872-6062	A071				
8130-656-1090	A142				

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89G457D	A025

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	J74 thru J76	A106
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J74 thru J76	A106
J77 thru J94	A105
J95 thru J97	A108
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ARNG: State AG (3).
USAR: None.

For explanation of abbreviations used, see AR 320–50.

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